S. HRG. 100-663

SHAM RECYCLING

HEARING

BEFORE THE

SUBCOMMITTEE ON
HAZARDOUS WASTES AND TOXIC SUBSTANCES

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

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SHAM RECYCLING

THURSDAY, APRIL 14, 1988

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON HAZARDOUS WASTES
AND TOXIC SUBSTANCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:35 a.m., in room 406, Dirksen Senate Office Building, Hon. Max Baucus (chairman of the subcommittee) presiding.

Present: Senators Baucus, Simpson, Stafford, Durenberger, and Warner.

Also present: Senator Breaux.

OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Senator BAUCUS. The hearing will come to order.

One of the guiding principles that Congress used in enacting the Resource Conservation and Recovery Act was to encourage reuse and recycling of waste materials. There are important reasons for this. Our Nation generates huge volumes of solid waste every day, and some of it is hazardous, and we are running out of places to put our garbage.

The American public is committed to the concept of recycling. More and more Americans are becoming aware of the need to recycle. To encourage recycling, Congress exempted operations from many of our pollution control laws that are required of other treaters and disposers of waste, and to some degree this approach has worked. A recycling industry has started to emerge. We have a long way to go, but clearly the incentive has helped.

Unfortunately, there are people who try to take advantage of our best intentions. There are many companies that are using the recycling exemption as an apparent attempt to avoid hazardous waste treatment regulations. This has become known as "sham recycling." Companies engaged in sham recycling are treating hazardous wastes apparently with only minimal controls of air emissions and residual waste. This type of activity may seriously threaten public health and the environment.

In 1986 one firm notified an EPA regional office that it was going to treat hazardous waste, but claimed that it was manufacturing a product and thus was exempt from RCRA regulations. Today, 2 years later, this firm still operates without a RCRA permit. This company, claiming a recycling exemption, is producing $100,000 worth of so-called product derived from hazardous

wastes. At one time it only accepted nonhazardous oil production waste. Now it is advertising nationwide for a steady supply of waste for its operation, be it hazardous wastes or not; it makes no difference to this firm.

Similar cases have come to our attention. EPA has left States to fend for themselves. Until the agency determines that a facility is a treater as opposed to a recycler, there is little most States can do to protect the health of their citizens or their environment from a company claiming an exemption as a recycler.

This raises a major environmental policy question: How do we achieve our initial goal of encouraging recycling while making sure that sham operations do not take advantage of the law? Both Congress and the EPA are responsible. To date, EPA has failed to come to grips with the problem. Officials have let sham recycling operators slip through their regulatory fingers. Congress, on the other hand, needs to clarify the definition of recycling to close the obvious loopholes in the law.

Sham recycling is tarnishing the image of an industry that has played a significant role in disposing of the Nation's hazardous waste. Responsible members of the smelting, cement, and aggregate kiln industries have expressed concerns about sham recycling.

Modern recycling technology holds promise for controlling our growing national garbage heap. Recycling will be a critical component of America's waste management policy in the years to come. Ensuring that recycling protects—not harms—the environment is a goal of this committee and the subject of our deliberations today.

I thank our witnesses for coming this morning and sharing their expertise. I look forward to our attempt here to try to separate the wheat from the chaff and try to get more precision and definition so that we can encourage recycling and discourage some of the abuses.

Following our "early bird" rules, I will turn to the Senator from Louisiana.

OPENING STATEMENT OF HON. JOHN B. BREAUX, U.S. SENATOR FROM THE STATE OF LOUISIANA

Senator BREAUX. Thank you, Mr. Chairman for letting me sit in on the subcommittee hearing. I am not a member of this subcommittee, but as a member of the full committee I am vitally interested in the matter that is before the subcommittee this morning.

I commend the chairman for having these hearings and for his great interest in some of the problems that we are facing. I am afraid, based on what I have heard, Mr. Chairman, that the regime that has been instituted by EPA and the enforcement posture taken by EPA in the face of the problems that we are discussing has the potential for undermining much of what the Congress attempted to achieve in the last reauthorization of this most important law, when we were forced to legislate explicit directives and time frames for the phasing out of the land disposal of hazardous wastes.

To be clear, Mr. Chairman, let me state at the outset that I am all for resource recovery or recycling, and I believe that this has been a much-ignored part of this Nation's hazardous waste man-

agement problem. Indeed, in the last reauthorization of RCRA we paid more attention to the so-called land bans than to resource recovery or resource conservation, but I think it is not incorrect to say that our prevailing concern was over the fact that the agency, in its original rulemaking implementing our solid waste disposal statute, was finding ways of allowing the continued land disposal of hazardous wastes. It took the 1984 statute to say that continued land disposal of untreated wastes is not protective of human health and the environment.

It is also fair to say that many of us believe that resource conservation and resource recovery would only come about through congressional and regulatory actions that said to the hazardous waste generators of this country that continued land disposal will cost a pretty penny, thereby creating the economic incentives for private industry to look at the conservation and recovery options. Moreover, I do not want to leave the impression that Congress was silent on the issue of resource recovery operations. Indeed, Section 204 of the 1984 legislation was designed to provide standards for all facilities that utilize hazardous waste as a fuel, irrespective of whether or not that facility was labeled as a treatment, a storage, or a disposal facility under RCRA.

To me, that is the crux of the issue before the committee today: Has EPA, through its regulation or enforcement policy, allowed for the development of two classes of individuals who are essentially performing the same function, and has it done so in a manner that is not protective of human health and the environment? If it has, then we must use these hearings or the next reauthorization effort to correct that problem. Certainly the health and welfare of the citizens of our country demand no less.

Thank you, Mr. Chairman.

Senator BAUCUS. Thank you very much, Senator.

Senator Simpson.

OPENING STATEMENT OF HON. ALAN K. SIMPSON, U.S. SENATOR FROM THE STATE OF WYOMING

Senator SIMPSON. Well, Mr. Chairman, I like the idea of "those who come first, get served first" because sometime I get here first, and I like that. I think that is the way to do it.

First of all, I thank you for holding this hearing, Mr. Chairman. This is an excellent opportunity to get into this. We are all interested in the issue of doing something in this area that is appropriate, taking care of it, dealing with concerns about mining wastes and high-volume, low-toxicity wastes and oil field wastes, things that are important to the commerce of the Nation.

But I want to share with you, Mr. Chairman, I have a lot of trouble. Today's hearing is entitled "sham recycling" but I think the real title of some of it should be "sham lobbying techniques," and I speak about the inflammatory tactics of a group known as the Hazardous Waste Treatment Council—certainly not directed at this committee's staff or anything of that nature, but I had some personal dealings with these boobs about 4 or 5 years ago. I know the tactics of the group. I know how they employ it,

based on sensationalism or emotion rather than on facts, and I think that is very unfortunate.

It was very interesting that recently a company engaged in recycling of hazardous waste visited several Senate offices, apparently, and left behind a letter opener for the staff with the company name and a small plastic vial attached on the end which contains some aggregate material that comes out of the end of apparently an extremely long kiln. There it is. That is the letter opener, Exhibit A, I guess.

Apparently the Hazardous Waste Treatment Council represents several companies that are in direct competition with the company that left these little letter openers, and they are thus lobbying very hard—for pure business reasons, or greed or both, or whatever—to require that the company that produced this aggregate shut down for a period of years so, I guess, they can get more business. I learned that the Hazardous Waste Treatment Council, in an effort to inflame emotions and stimulate fear among the staff, tried to hire some individuals to dress up in "moon suits" and come up here on the Hill to collect these letter openers as if they were an imminent threat to the health of the staff.

Here is their little letter to Senator Simpson—that's me—and they say that this sample should be transported to a permitted facility as soon as possible for treatment or disposal in accordance with the law. "Please contact Ken Lauziere, who heads up the Safety Engineering Division for the Architect of the Capitol, to arrange for the transportation of this material to a permitted facility for proper disposal." That is this, what I am speaking about.

Now that is fascinating to me, that action. I don't know how many reported to the Capitol Architect, but the letter was circulated to all Senators, apparently, and staff, indicating that the substance was hazardous, directing them to call the Architect and, as I say, take it to a permitted facility. I think, Mr. Chairman, that is the kind of hype and hoorah that none of us appreciate as we deal with tough issues on this committee, and we deal with them very well. We have passed some good legislation. I am proud to be a member of this committee and the subcommittee.

We deal with the tough ones—Superfund, RCRA, endangered species, acid rain. We have to do the heavy lifting, and I try to help. We have our honest disagreements and we have a very, very superb technical staff. Sometimes I have some problems with some of their political activities, but technically they are absolutely superb, both sides of the aisle, and professional.

But we don't need this kind of stuff. We need facts. We don't need sensational grandstanding on the part of interest groups in an attempt to influence Congress to make decisions that affect business activities. We are not in the business of aiding one business group or another. We want to simply protect the environment in a commonsense manner, without shifting business from one company to another. This type of lobbying activity is unfortunate and decidedly boobish, and I do hope it will not continue.

My little personal experience with this happy band of warriors was during the last authorization of RCRA, where I had an amendment dealing with the double liner requirement, and the Hazardous Waste Treatment Council went to the press in Alabama and

stated something like I was trying to turn Alabama into "the waste dump of the Nation," I believe was the phrase, sending copies to all the alert Wyoming newspapers. That may be hardball but, you know, it is pretty childish. Stickball, we call that.

So I know firsthand how this group works, and I wanted just to make the committee members aware that we may be dealing with this kind of a group, that deals with hype and not reality, on this issue. Unfortunately, Mr. Chairman, I have a schedule conflict this morning because of a concurrent immigration hearing with Senator Kennedy chairing, but if I am not present to ask certain questions, I will submit them in the record so that they will be answered in writing. I would ask that the letter from this group be entered into the record, and I thank the chairman very much.

[The letter referred to by Senator Simpson follows:]

HAZARDOUS WASTE TREATMENT COUNCIL

HWTC

1440 New York Avenue, N.W.
Suite 310
Washington, D.C. 20005
(202) 783-0870

April 12, 1988

Senator Alan Simpson
261 SDOB
Washington, D.C. 20510

Dear Senator Simpson:

I understand that Marine Shale Processors, Inc. may have provided you with a sample of the "aggregate" it produces by burning hazardous wastes. Under the Resource Conservation and Recovery Act, 42 U.S.C. § 6921, this "aggregate" is legally classified as a hazardous waste because it was derived from the burning of other hazardous wastes. 40 C.F.R. § 261.3 (1987). This sample of "aggregate," like any other hazardous waste, should be transported to a permitted facility for treatment or disposal in accordance with the law, regardless of any claims made as to its specific content.

You may wish to contact Ken Lauziere, who heads up the Safety Engineering Division for the Architect of the Capitol, at 226-3460 to arrange for the transportation of this material to a permitted facility for proper disposal. Mr. Lauziere is responsible for making such arrangements on behalf of the U.S. Senate.

Please call me at 783-0870 if you would like further information, or have any questions about this issue.

Sincerely,

Richard C. Fortuna
Executive Director

Senator BAUCUS. Thank you, Senator.

The first witness is Dr. Porter. Dr. Porter, why don't you proceed?

STATEMENT OF J. WINSTON PORTER, ASSISTANT ADMINISTRATOR FOR SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY JON CANNON, OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING; STEVEN SILVERMAN, ATTORNEY, OFFICE OF GENERAL COUNSEL; AND JEFFREY D. DENIT, DEPUTY DIRECTOR, OFFICE OF SOLID WASTE

Dr. PORTER. Thank you, Senator. It is a pleasure to be here. I would like to submit my full testimony for the record and, if okay, I will just briefly summarize some of the key points in that.

Senator BAUCUS. Fine.

Dr. PORTER. I have with me today, Mr. Chairman, Jon Cannon of our Enforcement Office; Steve Silverman, on my right, who is with our Office of General Counsel; and Jeff Denit, on my far right, who is with our Office of Solid Waste.

What I want to do this morning is briefly focus on the issue of hazardous waste thermal treatment, let's call it, and I want to talk about several aspects of thermal treatment. I want to talk about hazardous waste incineration, per se, and I want to talk about several aspects of recycling that involve thermal treatment.

Let me start with hazardous waste incineration. We have about 250 to 300 operating incinerators in this country that burn hazardous waste. They are to be permitted by 11/89, pursuant to RCRA. We are on track to do that. These people are covered by the full panoply of RCRA requirements—subtitle C permitting, corrective action, financial assurance, and all the other factors—so that is sort of one universe we will be talking about today, is the folks who do hazardous waste incineration, without any representation that recycling or energy recovery or things of that nature are involved.

The other, perhaps more interesting group we will be talking about today is the recycling aspect of that. Within recycling, I want to break it down further, if I can, into sort of two halves. Again, we are talking only thermal treatment—at least, I am so far—not other kinds of recovery, but we have kind of two halves there, as I say.

We have the energy recovery part, where people are burning various hazardous materials to recover energy. There are roughly 900 boilers and probably 100 or so industrial furnaces like cement and light-weight aggregate kilms burning hazardous waste for energy recovery. Briefly stated, our test there, at least our current test, is that you have to have a material which has at least 5,000 BTU's per pound of energy value, as requested, in order to be considered an energy recovering unit. I will talk in just a minute about what other requirements apply.

The other half is materials recovery, which gets more complicated. These are folks like smelters, industrial furnaces, that recover various metal or other values from the hazardous waste stream, and there are probably only a dozen or so of those.

So we have a universe here, at least in terms of thermal treatment, of about 250 to 300 incinerators, about 900 industrial boilers, and probably about 100 to 150 other industrial furnaces who are either burning waste for energy recovery or recovering some kind of mineral or other value.

Let me talk to you just a second, Mr. Chairman, then about what regulations apply and perhaps, just as importantly, where we are heading in this business. As I said, the hazardous waste incinerators are covered by subtitle C of RCRA. The rub has been, as you know, under the so-called sham recycling, are there people out there who under the aegis of recycling are operating without benefit of an RCRA permit?

The things that do apply to the folks that are operating in a recovery mode or a recycling mode are, we have a number of things going on. We proposed some new requirements for those folks which frankly will bring them pretty much in line with hazardous waste incinerators. We propose to bring them under the "four nines"—the 99.99 percent destruction—the other administrative requirements of RCRA. We expect to have all that finalized early next year. We have had a proposal on that and we have taken a lot of comment.

In addition, for the folks that are in the recycling business we have added some additional wrinkles. We have put out requirements for so-called products of incomplete combustion, for metals, and for hydrogen chloride. We liked those so much, we decided now to apply those also to the incinerators, so that what is going to happen, in very simplified form, is that by early next year, early 1989, we will have requirements in place. It will be pretty uniform for people, whether they recover metals or BTU values or whether they do not, and everybody will be on a pretty level playing field, irrespective of whether they are recycling or not.

In the interim, and I think that is perhaps the subject of a lot of this hearing, in the interim we have had a lot of dialogue on what to do about people that may or may not be recovering or recycling properly. As I said, on the BTU end it is a fairly straightforward test. On the other end—that is, materials recovery—we look at such things as, is there apparently an economically viable amount of material in the material being treated? In other words, do you have enough zinc or some other material in the material you are allegedly recovering to make anyone believe that you really are burning for recovery as opposed to burning for disposal?

We look at the amount of revenue that you derive from this. It is something of a judgment call. We are trying to make a judgment as to whether in fact you are doing this for recovery or you are doing it for disposal. It is fairly complicated and what we decided to do, basically, as I said, is to move toward a system where everybody will have to meet certain technical requirements in terms of efficiency and emissions and so forth, and I think that will be very helpful when we get there.

I might close by saying in the broader context we also are very interested in recycling. It is a fairly difficult thing to encourage because you run into all of these difficult judgment calls, and where does recycling leave off and treatment begin? In fact, I might say

in the statute itself used oil is about the only place where we were given explicit statutory authority to, in effect, promote recycling.

But we are very interested in a dialogue with you on these matters, and maybe at this point I will stop because I know you have many questions, and you have my written testimony. But I might just close by saying we are trying to make it as level a playing field as we can. We know there are some equity issues here. We do want to regulate all these people, because we are certainly just as interested in emissions from any kind of thermal device, whether it is recovering materials or not recovering materials. The people who live next to it are concerned about the emissions and other requirements, irrespective of what the alleged purpose of the facility is, so we are trying to get that playing field level.

Thank you, Mr. Chairman.

Senator BAUCUS. Thank you very much, Dr. Porter.

Some of the question is whether EPA has sufficient present authority. In your judgment, do you have, under current law, enough authority to do what you think should be done—that is, to close the gap between the treaters and the recyclers?

Dr. PORTER. I think we do, Mr. Chairman. It depends a little bit on if you are talking about regulating as opposed to promoting recycling. I mean, there are kind of two halves of this, I guess, but if you are talking about regulating and being sure the recyclers meet the requirements we think they should meet, we are moving ahead with those requirements and I think we do have the legal authority to do that.

I was just going to say one thing that Mr. Silverman mentioned to me is, we do have a problem which I didn't get into in my testimony, which overarches a lot of this, which is a recent court case brought by the American Mining Congress on the definition of waste, and I would need a caveat about saying that.

Senator BAUCUS. Do you recommend any legislative change at all, either to address that litigation or the consequence of that litigation or any other problems that various groups see? Some environmental groups think that there perhaps is not enough authority or that the statute is too ambiguous, or that perhaps we don't have high enough standards. I am just curious whether, in your judgment and the judgment of EPA, there is sufficient authority to address any of those concerns or whether you recommend any legislative changes.

Dr. PORTER. Mr. Baucus, I think we have to watch that carefully. We are in kind of a moving target situation here. I think a lot of this can depend on whether this AMC decision and other things, how they ultimately get interpreted and played out. I think that we are in pretty good shape now, and I won't foreclose the option later of seeking such authority, but I think right now we want to work through the regs we proposed and get those out on the street and deal with that.

Senator BAUCUS. Are there any States that are handling this situation in a way that we can look at and learn lessons from?

Dr. PORTER. The State of California, which is going to testify later, has some innovative approaches to recycling, and I think there are perhaps others. We are reviewing some of those, because some of the States have been fairly aggressive on trying to come up

with ways of regulating recycling and on the other hand promoting recycling to the extent they can.

Senator BAUCUS. I understand New York does, too. Is that correct?

Dr. PORTER. I think that's right, yes.

Senator BAUCUS. Have you had a chance to look at those statutes sufficiently enough to know whether we should make any changes?

Dr. PORTER. Well, I think we will supply it for the record on that because we have to look carefully. I have read over some of them, and again it is a very close call, this promoting of recycling versus the regulation for pollution control or environmental control. I am not sure. I just think we have to be very careful in legislation in this area because I know I went through this with respect to used oil, where we were sort of told to promote and effect the recycling of used oil. There was a lot of contention on that, and I think we came out okay on it, but it is in my judgment a fairly hard thing to legislate without a lot of thought.

What I would like to do is, if it is okay with you, I would be happy to look at some of those and respond for the record on what ideas we see in them that might make sense.

Senator BAUCUS. When will your new regulations be in effect?

Dr. PORTER. They will be finalized by early next year. We are going out with some—we are trying to get the incinerators and the recycling or recovery folks on the same track, and are reproposing this summer some materials that we think we will have finalized in 1989.

Senator BAUCUS. How much of this sham recycling problem is just due to a difference in treatment—no pun, let me back up—a difference in the standards that treaters have to meet versus recyclers currently, and how much of it is that certain recyclers are meeting the standards that are available but others are not—that is, it is an enforcement problem?

Dr. PORTER. Well, I think there may be some of that because certainly right now in terms of being labeled a "recycler" you don't have to meet the kind of requirements that the disposal people or the final treatment people have to meet. We are moving fairly rapidly to close that loophole, if you want to call it that, so I think that window of opportunity is shrinking very quickly but I think there has been some of that.

Senator BAUCUS. When will these facilities under the burning or blending rules be permitted, after the rules are finalized?

Dr. PORTER. I'm sorry, Mr. Chairman. I didn't get the question.

Senator BAUCUS. These blending or burning facilities, when will they be permitted after the rule is finalized?

Mr. SILVERMAN. The rules would become effective 6 months after they are promulgated, early next year. Since they are HSWA rules and not part of the State authorization process, EPA could start issuing permits immediately as the rules become effective. Devices would be permitted one-by-one as the permits are called in.

Senator BAUCUS. Thank you.

Senator Breaux.

Senator BREAUX. Thank you, Mr. Chairman.

I want to make my position very clear from the outset with regard to the burning of hazardous waste. I don't care if they are

producing baby food as an end product, or some product that is solid gold. As I see it, if they are burning hazardous waste, they ought to be under the same rules whether they are burning it for the purpose of destruction or whether they are burning it for the purpose of producing an end product that has some kind of a commercial value.

There is no justification, I think, if we are trying to protect human health and environment, to say, "Well, we are burning it for a good purpose" as opposed to a bad purpose, or "We are burning it for a commercial purpose" as opposed to a destruction purpose. Is there any legitimate justification for treating a facility differently based on the end product that is presumably produced from burning of hazardous waste?

Dr. PORTER. Well, Senator Breaux, I think not, as a philosophical matter. I think the problem we have had is, some things in the law that we have to deal with say that you will, in effect, do certain things.

Senator BREAUX. I understand that, but——

Dr. PORTER. We have tried to overarch that with our general authority to deal with eminent endangerments, things like that, but I absolutely agree with you on the philosophical matter, and we are trying to move our regulations——

Senator BREAUX. Well, it's more than a question of philosophy. I am talking about a question of human health and safety.

Dr. PORTER. Yes, sure.

Senator BREAUX. If we are burning hazardous waste in a facility and we are concerned about how that is done, it shouldn't matter what the end product is, should it?

Dr. PORTER. I think you are right, and I think that's the way we are moving in our regulations.

Senator BREAUX. How did the Congress foul up in 1984 and 1982 when we wrote the law that allows for the burning of hazardous waste to be treated differently, depending on its end use? What is missing in the law? What did we leave a great big hole in that allows it to be handled differently?

Dr. PORTER. Well, I think there are a couple of things that were done in the law, and I wouldn't adopt quite your terminology because it depends on who you talk to in these things. But, for example, there are certain requirements that relate to mining wastes that are different, you know, in the so-called Bevell amendment, where you handled different things differently. Used oil is——

Senator BREAUX. I am talking about identical hazardous waste going into a facility. I am not talking about different waste.

Dr. PORTER. Yes.

Senator BREAUX. Apparently the law says that the end product determines what the standards are, whether you need a permit for incineration or not.

Dr. PORTER. Yes.

Senator BREAUX. Where in the law did we mess up?

Dr. PORTER. Well, if you want to call it that, I think what is in the law is, there are requirements that we treat differently people recovering energy, people recovering materials, and those are the things that we have been talking about. We are trying to bring the so-called industrial furnaces and boilers under the same regulation,

but we have been told to treat those differently in some respect in the law.

Senator BREAUX. Okay. Now are you saying to this committee that you can use the existing law and yet propose new regulations that would be effective 1990, 1991, without any changes of the law, that would essentially treat the burning of hazardous waste for whatever purpose under the same set of standards as far as EPA is concerned? Can you fix it without congressional action?

Dr. PORTER. I think we can. There are a lot of sort of caveats to some of this stuff because, as I mentioned, this American Mining Congress decision on what is a waste is overarching a lot of this. But our regulations right now that we have on the street——

Senator BREAUX. This American Mining Congress decision?

Dr. PORTER. Yes.

Senator BREAUX. Shouldn't that be an EPA decision, as far as your regulatory——

Dr. PORTER. Well, it was a court decision.

Senator BREAUX. A court decision? Okay.

Dr. PORTER. But the regulations I mentioned on furnaces and boilers that we are proposing or finally proposing this summer, and will go final early next year, I think will solve a lot of that.

Senator BREAUX. So you are saying that you can do it without congressional changes?

Dr. PORTER. We can do most of that without congressional changes.

Senator BREAUX. All right. You have in your regulations that were issued in January, 1988, 53 Fed. Reg. 522, a set of criteria that you say should be looked at to determine the end product of an incinerator that is saying, "We are incinerating hazardous waste but we are doing it for the purpose of producing a product; therefore, we don't have to have an incineration permit from EPA." You say, "These are some factors that we are going to consider in making that determination," and you list whether the operator of the device is paid to burn the waste, and the percentage of income derived, the energy value of the waste, how much energy or material value each waste contributes to the recycling purpose, all those criteria.

We have a company in Louisiana, Marine Shale, who will be testifying later on; how many of these criteria do they meet to justify their position that they are in fact a recycler?

Dr. PORTER. Mr. Breaux, I have a problem with respect to that case. There is a criminal investigation going on on that case, and I can't get into much detail today about those kinds of issues. That is being looked at as part of a criminal investigation.

Senator BREAUX. Has EPA ever applied these criteria to Marine Shale to see if they can justify their——

Dr. PORTER. Yes, I think it is fair to say we have looked at those criteria with respect to them and other people. But what has happened in that case is, the Department of Justice has jurisdiction over that now, and they and others will look at this as part of that investigation, so that is the way that is proceeding at this point.

Senator BREAUX. Has EPA ever looked at this particular operation vis-a-vis the threat to human health or the environment, and

particularly other things, other than their claim that they are a recycler—i.e., water, air quality, what have you?

Dr. PORTER. Yes. As the criminal investigation has proceeded, we have not given up our sort of public health function in EPA——

Senator BREAUX. That's right.

Dr. PORTER [continuing]. And we are using that data generated in that to look and see if there is any endangerment to public health.

Senator BREAUX. I have a letter from the EPA, I guess, that was yesterday, giving them a notice of violation of the Clean Air Act from your region.

Dr. PORTER. Yes.

Senator BREAUX. Are you all aware of that one?

Dr. PORTER. I am aware of that, yes.

Senator BREAUX. Okay. Thank you.

Senator BAUCUS. Thank you, Senator.

Senator Stafford.

Senator STAFFORD. Thank you, Mr. Chairman. I am sorry to say I didn't get here in time for the opening statement by Dr. Porter and I have been trying to play catch up since I arrived. I just have one question of personal interest and that is, the sham recycling, the word "sham," is that an acronym or did you actually pick that name out?

Dr. PORTER. That's a real word.

Senator STAFFORD. Well, I think it is particularly apropos, from what I have heard thus far. With that comment, I will pass.

Dr. PORTER. Thank you.

Senator BAUCUS. Thank you, Senator.

Senator Durenberger.

Senator DURENBERGER. Mr. Chairman, let me ask Dr. Porter about another matter.

Earlier this year EPA was challenging a North Carolina law that sought to regulate a hazardous waste treatment facility and, as a result of a letter from some members of this committee, you pulled back from that challenge to reconsider the policy questions. I wonder if you could give us an update on that?

Dr. PORTER. Certainly, Senator. What we did in North Carolina, as you know, we began to move toward withdrawal of the RCRA program based on a State law that seemed to impact one and only one facility. What we have done now, there is a hearing scheduled for that in June still. I delayed the hearing 4 months but, in addition, what the Administrator and I decided to do was to do a so-called national review for 3 or 4 months to see really how should we address those kinds of issues under both Superfund and RCRA.

What we are finding is two things happening sort of simultaneously. On the one hand, under Superfund, as you know, we are supposed to work with the States and the States are supposed to ensure us that they have sufficient capacity to handle hazardous waste, on the one hand. On the other hand, many of the States, particularly in the Southeast apparently, are beginning to enact laws restricting various facilities or movement of hazardous waste.

So, since there are a lot of issues developing here, what we decided to do was to try to put together by mid-May an EPA policy on which tool should we use, if any. Should we use the tool of threat-

ening to withdraw the RCRA program if we think people are not being consistent with the national RCRA program? That gets mixed up with things like, a State can also be more stringent, so you get the issue of where does more stringency leave off and where does consistency begin.

Then Lee Thomas was very interested also in how this would play out with respect to this Superfund certification, whether we should use that as a tool to say to people, "Look, we are not going to necessarily deal with you on a facility-by-facility or a law-by-law basis, but be advised that come a year from this fall, you need to certify that you have sufficient capacity to deal with hazardous waste or you will lose your Superfund money." That is a little broader tool, not nearly as surgical, perhaps, but it may be a better way to go.

So basically what we hope to do is report back to you and others in mid-May, and we will be happy to brief you in the interim as things go along, on where we think that is all going to come out, but we decided to postpone the hearing because these things were kind of catching up with us and we thought we better call time out and take a look at it.

Senator STAFFORD. Mr. Chairman, I thought that was very responsive, and I hope we can find some time the latter part of May or whenever to get briefed in some form on this, because it is important.

Dr. PORTER. I will be happy to.

Senator BAUCUS. Dr. Porter, I am still unclear about the AMC decision. It just seemed to me, if I were in your shoes, that I would want some statutory clarification as a result of that decision. As I understand that decision, the Court of Appeals basically held that if material is not discarded, that it is not a hazardous waste for the purpose of ordinary treatment standards. You say that you can draft regulations that you think can address most of that problem, but if I were an administrator, I would want some directions or clarification so that I wouldn't have to worry about a subsequent lawsuit.

Dr. PORTER. Yes.

Senator BAUCUS. Don't you want some statutory clarification to make it more clear—nothing is crystal clear—but more clear, as clear as possible to you at the agency and to the universe, as to what we are intending to do here, namely to require both treaters and recyclers who have certain hazardous wastes to meet the same standards?

Dr. PORTER. Mr. Chairman, it is entirely possible we will need that. What I would like to do, if I can, I want to consult with the Administrator a little on this also because I think what we have done, we have read that decision, we have put forth our own interpretation of it. We are trying to move in that direction. We are certainly troubled by what is going to happen.

First off, we are not sure the court is going to say we interpreted it properly, so it is entirely possible that we want to get back to you and say, "Look, we are in kind of a no man's land here where we are having a very difficult time even defining what is a hazardous waste." What I would like to do, though, is approach that fairly deliberately with you, in writing if possible, because first off, I

haven't had a chance to talk to Lee about this recently and I would like to talk about it some internally, in the sense of what our sort of definitions are and what potential problems are, because a lot of this can depend on how this plays out.

Frankly, I think it is fair to say that the decision itself we had some difficulty with in terms of just clarity and being sure we understood what was in fact being said. We have tried to put down in writing what we think is the best interpretation of what the judge said, but I think it is certainly possible. I am just not prepared to say today in a black-and-white sense that we need it or don't need it, but I think it is entirely possible.

Senator BAUCUS. Well, this committee would appreciate correspondence from the Administrator indicating, in the opinion of the Administrator, whether the statute should be changed.

Dr. PORTER. I would be happy to do that.

Senator BAUCUS. Thank you very much.

No more questions?

Thank you very much, Dr. Porter.

Dr. PORTER. Thank you.

Senator BREAUX. Mr. Chairman, I have some more questions.

Senator BAUCUS. I'm sorry.

Senator BREAUX. I appreciate the problems and concerns you have because of criminal investigations. My other concern is, while all of this bureaucracy is taking place, legitimately so, I want to be able to assure the people in Louisiana, who have incredible problems in environmental areas, that this facility down there is not an imminent threat to human health and the environment.

The EPA has the authority to do something about any facility that is an imminent threat to human health and the environment. Your agency, today or yesterday, issued a clean air violation. In February, the State of Louisiana issued a clean water violation, a whole plethora of examples where they are dumping in the river and discharges, et cetera, all in violation, activities that are done without a permit. We have testimony today that talks about burning benzene, that they could only achieve the burn on benzene of 59 percent instead of the "four nines"—incredible examples.

Maybe some of them aren't correct, but my concern is, what is EPA doing while we wait for the bureaucracy to act that can ensure the human health and safety in this area?

Dr. PORTER. Senator, let me address that in a couple of ways. I want to assure you, in fact, the Administrator and I had a long chat about this last night, because we want to be very clear that we have not given up our public health and environmental authority while this investigation is going on, so I want to say a couple of things.

One is that the program side of the house, or the side of the house which deals with things like environmental issues and whether there is an imminent endangerment and things like that, is being kept informed in a technical sense on what is going on. To date, we have not seen anything that would indicate to us there was an imminent threat to public health. That is number one, and we are doing that in an ongoing way. It is not something that we are stopping or we are going to rely on data of 2 years ago or something.

The second thing I want to say is, the Center for Disease Control in Atlanta, along with Louisiana State University and the State Health Department, is doing a study in the area that started 2 or 3 months ago with respect to cancer incidence in the area. There have been some allegations that the cancer rate is high in the area. We have been concerned about that and are working with them to do an area-wide look at cancer rates and whether there might be any implications with respect to cancer from any kind of facilities, so there is a cancer study going on. We are also monitoring, as the criminal investigation goes along, from a public health standpoint, and in fact can take Superfund removal authority, for example, if at any point on the way we believe that there is a substantial endangerment, so it isn't like we are not doing that.

Senator BREAUX. The problem is—and I appreciate that work is being done in the cancer connection studies, the long-term studies on whether there is a connection or not—but in the meantime we have actual clean air violations from your department, we have water pollution violations from the State. The State's letter that you all have, that is dealing with this particular company, is a horror story. I don't want to take the time to read it but, it scares you to death if what the State says about this facility is halfway true, about the things that are being dumped into the bayou.

How far does it have to go before you can make the determination that this is a threat? Does it have to be causing cancer before it becomes an imminent threat, or do you stack up enough violations that someone makes the logical conclusion that this is a threat?

Dr. PORTER. Senator Breaux, again we—as you see by that air violation notice—what we are doing, the best we can, is to deal with any violations that come up along the way and act on those. In addition, we are looking at the sort of big picture with respect to overall endangerment. I guess it is our judgment at this instant that there is not sufficient evidence of an imminent health threat to need to move under things like Superfund authority, but we are monitoring the situation.

Again, I would be happy to meet with you and go over this in more detail. It is a little awkward for me, with a criminal investigation, to get into much detail on this right now.

Senator BREAUX. Well, there should be a standard that is higher than having to put somebody in the penitentiary to stop them from operating. They don't have to go to the penitentiary before we can say this is a threat to human health and the environment.

Dr. PORTER. We agree with that 100 percent, and we are monitoring very carefully, and I will keep on top of it.

Senator BREAUX. Yes.

Senator BAUCUS. Thank you, Senator.

Senator Chafee.

Senator CHAFEE. No, thank you.

Senator BAUCUS. Thank you very much, Dr. Porter.

Dr. PORTER. Thank you, Senator.

Senator BAUCUS. I think I will combine the next two panels: Mr. Alex Cunningham, Chief Deputy Director of the California Department of Health Services; Dr. George Vander Velde, Chemical Waste Management, Inc. Jacqueline Warren, attorney at the NAPS

Resources Defense Counsel; and Richard Fortuna, vice president and general counsel of the Hazardous Waste Treatment Council.

Mr. Cunningham, why don't you proceed. California in many ways does precede different areas. I think it is altogether fitting that you should head up this panel. Why don't you go ahead?

STATEMENT OF ALEX CUNNINGHAM, CHIEF DEPUTY DIRECTOR, CALIFORNIA DEPARTMENT OF HEALTH SERVICES

Mr. CUNNINGHAM. Thank you, Mr. Chairman. Good morning. Thanks again for inviting the State of California to participate in what I believe are very worthwhile hearings.

I am the Chief Deputy Director for the California Department of Health Services, in charge of the Toxic Substances Control Division. My division carries out the hazardous waste control program in California. It is one of the oldest and most stringent hazardous waste control programs in existence today. I have submitted my full testimony and I would like to just summarize briefly.

This program has always emphasized recycling of hazardous waste. In 1985, Governor George Deukmejian signed Assembly Bill 685, establishing recycling as the preferable alternative for hazardous waste, second only to not generating it at all. As you know, recycling means the reuse or reclamation of the waste material.

Because many materials are similar in chemical composition to materials used as fuels, burning waste for energy recovery qualifies as recycling. We are recovering the resources invested in these materials and burning them in place of virgin fuels. Thus, the classification of burning for energy recovery as recycling we believe is philosophically correct.

The department's dedication to hazardous waste recycling is shown by the extensive regulations addressing recycling and the 12-year history of our hazardous waste recycling promotion group, known as the California Waste Exchange. In California we regulate hazardous waste in a similar manner to the Federal system. However, we have a program which not only is broader in the increased number of wastes that we identify as hazardous but places more stringent requirements on these wastes and the facilities managing them.

As part of this greater stringency, we have already answered the question before the committee of California's off-site recycling facilities. Off-site recycling facilities in California are required to obtain a permit for the actual recycling process, rather than just for storage prior to recycling. Therefore, the State has greater control over hazards posed by recycling operations.

To counterbalance the added requirements for California's recycling facilities, we have crafted a series of resource recovery facility permits that impose varied levels of regulatory burden on the facility. In addition to these permit instruments, we have the option of issuing an administrative variance from permit requirement with conditions when the recycling process is insignificantly hazardous. Thus, we in California have the flexibility to match the regulatory requirements for a facility to the hazards posed by the operations of that facility.

I must add, however, that in no case is California less stringent than EPA in applying these regulatory options. Basically, what we have is a decreasingly burdensome process. We have a Series A permit, for example, for recycling of waste that is practically RCRA waste; a Series B for less hazardous waste; and a Series C permit, which is a much more expedited process, for recycling barely hazardous wastes.

In our opinion, the Federal Government could benefit from California's experience by creating a series of resource recovery facility permits. This classification of permit would recognize the fundamental difference and desirability of recycling over treatment and disposal.

By creating a series of increasingly restrictive permits, the degree of regulatory burden placed on a facility could be matched to the degree of hazard posed by the operations at the facility. Only by creating such a flexible permitting system can the Federal Government, in our opinion, assure that recyclers would not be forced out of business by the current burdensome, one-size-fits-all permit.

I understand that one of the primary concerns of this committee is burning of hazardous waste fuels in boilers and industrial furnaces without the protective requirements of the hazardous waste facility permit. In California, we have issued a hazardous waste facility permit to Systek Corporation to burn hazardous waste as a supplemental fuel in a cement kiln.

However, to obtain this permit the cement kiln was required to conduct trial burns with extensive monitoring to establish that the unit met the criteria for destruction of the hazardous waste constituents. The information from the trial burn was then factored into emissions modeling studies used to develop operating and monitoring requirements for the kiln and limitations on the types and quantities of hazardous waste burned. The standards and procedures used for the issuance of this permit, by the way, are identical to those used for permitting a hazardous waste incinerator.

Evidently the requirements placed on Systek didn't hurt the profitability of their operation. This kiln rarely has excess capacity for destruction of hazardous waste, and currently burns a significant portion of the State's ignitable waste. I would, however, like to caution against a sudden imposition of the full RCRA permit process on recyclers. This would cause many recyclers to abruptly close their operations, without allowing adequate lead time for development of alternatives.

Further, I would like to stress that recycling operations, especially burning of ignitable waste for energy recovery, are essential to the success of our land disposal restriction program. Currently, California's solvent recyclers and used oil recyclers rely heavily on out-of-State incineration and injection well facilities for disposal of recycling residues and low-value solvents. With injection wells disappearing and incinerators so rare, we must rely heavily on boilers and industrial furnaces for disposal of these wastes.

In closing, I support the idea of requiring permits for recyclers. This concept works well in California and could work well nationally. However, I feel that the permit requirement for the recycling process must be phased in, perhaps with an interim status program whereby EPA could require completion of the process in an order

reflecting the hazard posed by each facility. In addition, I would like to suggest that EPA devise a system of less restrictive resource recovery facility permits similar to California's that would allow the permit requirements to match the hazards posed by each facility.

Thank you very much for inviting us to testify at these hearings, and we would be happy to provide this committee with any assistance that we can on this issue.

Senator BAUCUS. Thank you very much, Mr. Cunningham. That was a very good statement.

Dr. Vander Velde?

STATEMENT OF GEORGE VANDER VELDE, VICE PRESIDENT FOR SCIENCE AND TECHNOLOGY, CHEMICAL WASTE MANAGEMENT, INC., WASHINGTON, DC

Dr. Vander Velde. Good morning, Mr. Chairman, and thank you for the opportunity to appear before the subcommittee on this important matter. My name is Dr. George Vander Velde. I am vice president of Chemical Waste Management for Science and Technology.

Chemical Waste Management is the world's largest and most diverse provider of hazardous waste management services. As the leaders in our field, we are absolutely committed to offering the most advanced and effective technologies for hazardous waste reduction, recycling, treatment, and disposal.

Chemical Waste Management believes high-temperature incineration is one of the very best technologies available for managing many waste streams. We have invested strongly in this technology, with three full-scale incinerators in operation, and we are constructing several more over the next few years—a not insignificant investment.

Mr. Chairman, this hearing focuses on one of the most important issues arising under RCRA: Should the law allow regulatory shortcuts for hazardous waste recycling and, if so, can this be accomplished without jeopardizing protection of human health and the environment? We think the answer is "no," and we believe the Congress must clarify the statute so that all thermal processing of hazardous waste is subject to the same rigorous standards.

This issue is much broader than a few "sham recyclers taking advantage of the current loopholes in EPA's program by claiming to produce a product. EPA's entire regulatory approach set forth in the recently proposed rule on boilers and industrial furnaces, suggests a policy of bending RCRA's basic health-protection mandate to accommodate anything remotely resembling recycling. Under the guise of recycling, fuel burners and smelters are permitted to process material of negligible heat or mineral value and to do so with little or no regard to material input, process control, air emissions, or residuals management. We see no need—no shortage of fuel or raw materials—that could justify any sacrifice of public health and protection. Such burning should take place under strictly controlled operations by trained personnel, and the emissions should be known and should be quantified.

There is no indication that Congress ever intended or authorized EPA's lenient approach. In fact, that is precisely the problem: Congress needs to speak more clearly on this issue. When it does, we believe three essential points must be emphasized.

First, EPA should not be allowed to create interim status, with very few substantive requirements for facilities now wishing to begin burning hazardous wastes. This is 1988, and the RCRA program is no longer in its infancy. Every operator of a hazardous waste incinerator must be required to demonstrate, publicly, the safety and the effectiveness of his facility.

This means a trial burn, where destruction efficiency of that incinerator is proven. It means a public hearing, where people whose health could be affected are given a chance to examine the facility's demonstration and to be heard on the issues. And it means a permit through a knowledgeable, responsible official makes a judgment about the suitability of that facility to burn hazardous waste and under which conditions such burning should take place. These are the minimum safeguards, and Congress should insist on each of them.

Second, the substantive requirements governing boilers and furnaces must be the same as those for incinerators. Hazardous waste handling procedures, process control air emission standards, operator training, financial responsibility requirements, safety equipment such as automatic shutoff devices, and all the other requirements deemed important enough for incinerators must be applied to boilers and furnaces. Anything less is an unjustifiable short-cut in a matter of high importance to the public's health and welfare.

Finally, the statute must be clarified on the question of residuals management. EPA has misinterpreted the so-called Bevill amendment such that much of the ash and other residuals from burning hazardous waste in boilers and furnaces would be exempt from RCRA subtitle C controls. Unlike incinerator ash, these residuals would not be treated to determine whether they remain hazardous. They would not be managed to prevent the remaining hazardous constituents from leaching into groundwater, or even be monitored to find out whether groundwater contamination is occurring. Instead, they would be sold in commerce as products, dumped into ordinary sanitary landfills, or simply piled up on the ground and forgotten. It is perplexing that EPA could even imagine that Congress had sanctioned such a result, and we strongly urge this committee to correct that misimpression.

Mr. Chairman, not every device or category of devices is equally effective at destroying hazardous waste. Not every ash or other residual is hazardous to the same degree. Not every operator has the same expertise to control his process and ensure safety when burning hazardous wastes. And not every location is equally suitable for a hazardous waste incinerator. But what must be the same—the same everywhere—are the standards and procedures used to judge the capabilities of those whom we trust to protect the public health while performing this important public service. We believe that Congress must act to uphold this principle, and Chemical Waste Management would be pleased to be of assistance to this committee in achieving that goal.

Thank you very much. I would be happy to address any questions that you might have.

Senator BAUCUS. Thank you, Dr. Vander Velde.

Next, Jacqueline Warren.

STATEMENT OF JACQUELINE WARREN, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL, NEW YORK, NY

Ms. WARREN. Thank you, Mr. Chairman. I am testifying today for Wendy Gordon, who was originally invited to be here but was unable to, and I will just summarize quickly what our testimony is. I agree very much with many of the statements that other witnesses have made and that some of the members of the subcommittee made with respect to the question of requiring equal standards for processes which pose equivalent threats.

Our message is really quite a simple one. I don't really care why the hazardous waste is being burned, whether it is being burned for energy recovery or simply for destruction or because a product is being produced. I am interested in the fact that there are serious adverse health and environmental results which can be consequences of that burning if it isn't regulated, and I think that a lot of the fault really lies with EPA's implementation of the statute.

I think that the Congress tried to close the loophole in 1984 by saying that it wanted the ultimate standards that applied to incinerators to be applied to other hazardous waste burning for fuel, for energy recovery. We now see that there are some people who are claiming that they are not doing energy recovery, they are not doing destruction. They are producing a product. They are manufacturers.

As I said, my concern is not with what they say they are doing but with what they are doing. I want to be sure that health and environmental concerns are adequately protected in the process.

Unfortunately, the EPA regulations that the agency was told to come out with in the 1984 amendments, which have only now been proposed and which we hear are going to be reproposed, really won't accomplish that. They still establish a double standard between incinerators and furnaces and other forms of thermal treatment. The 1984 amendments have a couple of objectives. One of them is to achieve some equivalence among processes burning hazardous waste. The other is to minimize the long-term and short-term risks to health and the environment. Minimizing from our point of view, from our philosophical position is that we ought to be moving to close down on releases to the environment from whatever source they come and to whichever environmental medium they go.

The agency's proposal in May of 1987 would have allowed, for example, very much higher hydrogen chloride emissions than incinerators are currently allowed to emit. Interim status incinerators do not have to meet air standard requirements, but new incinerators do. This is one distinction between resource recovery facilities and incinerators that EPA is proposing to codify.

Second, the regulations would have included no particulate standard whatever, although the health effects evidence on particulates is quite clear.

Third, the proposed regulations don't include specifications for making sure that the way the process operates will in fact achieve the destruction of toxic substances that is necessary to protect health and the environment. The threat depends on the operation of the facility as much as on the process that is being used.

Finally, the regulations show that the agency is moving ever more toward risk-based determinations. In our view, this is really inappropriate. Risk-based, first of all, means based on EPA's determination of what is an acceptable risk. Just last week we found out that EPA is now saying that an acceptable risk of exposure to benzene in air, is 1 out of 180 or 1 out of 160.

The agency's proposal in May of 1987 would have used 10 to the minus 5 or a 1 in a 100,000 risk. We don't have a consensus in this country that 1 out of 100,000 is an acceptable risk of cancer. Such determinations of acceptable risk are a slippery slope that depends on the whim of an incumbent Administrator.

From our point of view, we would like to see the approach that is in the Clean Air Act, and is in the Federal Water Pollution Control Act, the Clean Water Act, as it is written, which is a technology-based standard. If you are trying to regulate a universe of processes, I think you have to go with technologies that you know can achieve the "four nines" destruction efficiency and the other kinds of parameters that will guarantee that the wastes will be destroyed. You are not going to be minimizing the threats in the future if you spend a long time trying to decide what is an acceptable risk.

Risk-based approaches also take away the uniformity of a system which can only function properly in terms of enforcement and everything else if standards are uniform. The standards hazardous waste burners must meet should be uniform, at least for the category that they are in.

The proposal that EPA has come up with and which is going to be reproposed, I imagine, is going to be very similar to the original proposal, to the extent that it has a lot of variances and exemptions in it. Many of these we believe would undercut the thrust of trying to bring other hazardous waste burning facilities in line with incinerators. There is a small quantity exemption which can be far greater than the 100 kilograms per month exemption that is presently in RCRA. There is a category of low-risk wastes which would be exempted, although these so-called low-risk wastes include some known human carcinogens and animal carcinogens. In addition, there is no trial burn requirement, and there are some residuals exemptions.

A lot of the discussion of these exemptions is in our testimony and in the comments that we submitted to EPA, which I would like to submit for the record because they are much too detailed to go into here. The bottom line is that there is still going to be a double standard when EPA comes out with the regulations.

The Assistant Administrator, Dr. Porter, said earlier that he philosophically agreed that there ought to be equal regulations for equal hazards but that the law didn't permit them to do that. Well, that isn't the case. As I read the law, the law does permit it. It is their regulations that make these distinctions, and I think that they can correct the regulations.

If they don't, I think that you are going to have to correct it for them because we are not going to be moving toward the kind of protection and the closing of loopholes that will guarantee that people will not be harmed in the air or water or in any other way as a result of these processes, unless the Congress forces EPA to comply with what you have done.

Thank you.

Senator BAUCUS. Thank you very much, Ms. Warren.

The final witness is Mr. Fortuna.

STATEMENT OF RICHARD FORTUNA, VICE PRESIDENT AND GENERAL COUNSEL, HAZARDOUS WASTE TREATMENT COUNCIL

Mr. FORTUNA. Thank you, Mr. Chairman.

You know, for the past decade this committee has endeavored to put an end to the perpetual mismanagement of hazardous waste in this country. The chairman was very supportive of the 1984 reforms. Senator Stafford and Senator Chafee were instrumental in shepherding through this watershed legislation in a waning congressional session. Senator Breaux, then in the Congress, offered probably the most significant series of amendments to the law at the time, to close down unlined lagoons and prevent the placement of unregulated waste into salt mines and salt domes and the like, with one basic purpose in mind: to essentially establish a system that provided some certainty to the American public for a change—certainty that public health was going to be protected, certainty that wastes were going to be properly managed in the first instance, and certainty that the only options for hazardous waste management were not going to continue to be holes in the ground.

This has resulted in two sort of equal but opposite reactions. A number of people have said, "We are going to comply. We are going to take our lagoons out of service. We are going to shift away from landfills." But it has also resulted in a number of other people seeking ways out of the system, and these firms, along with the agency, apparently feel that there is unfettered discretion to essentially redefine and risk assess one's way out of the system. This is partly as a result of firms that are just always going to try to beat the system, but it is also a function of a failed agency enforcement program, as the previous questions just revealed, and a failed agency effort in this area.

Essentially what we are engaging in now is what I would call the ultimate loophole. We are seeing a rush of firms, with the accompaniment of the agency, to attempt to redefine wastes as not being hazardous and to risk assess one's way out of the system, using a series of site-specific variances and other kinds of exemptions that Ms. Warren just talked about. This sham, if you will, this risk assessing and redefining your way out of the system, I think falls into three basic categories: people who are trying to turn waste into products; people who are trying to use site-specific variances to get out of the system; and the so-called special waste exemptions. I would like to talk about all three of those very briefly this morning.

The way the waste-to-product scam operates is that people say, "RCRA is a hazardous waste management law. We don't manage

hazardous waste. We produce a product. Therefore, RCRA doesn't apply to us." It doesn't matter how similar or how identical that practice may be to incineration or to some other regulated practice. In fact, many of these production activities are the functional equivalent of open dumping.

One facility in particular that has been mentioned here this morning I think is a model facility—a model facility of a sham operation. That is the Marine Shale Processors facility in Morgan City, Louisiana. The largest commercial incinerator of hazardous waste in the country—in the world, for that matter—is a firm in Morgan City, Louisiana that is masquerading as an "aggregate kiln."

They burn 100,000 tons of hazardous waste a year, far more than any other licensed facility. They take in DDT, solvents, pesticides, creosote wastes, dioxin containing pentachlorophenols. They generate tons of hazardous waste ash per day. They routinely have fires at the facility, but are they subject to RCRA control? Must they meet the ash management standards and the other performance standards that Mr. Vander Velde talked about? No way, not according to them. The law doesn't apply to them because what they do is produce road base aggregate.

As a consequence, what you are seeing in this facility, as well as many others, is not the treatment of hazardous waste, is not the kind of certainty that this committee was seeking, not the destruction of constituents, not the retention of metals, but what you are seeing is the shifting of waste from one medium to the next. What you are seeing, as Senator Breaux's questions indicated, what you are seeing is hazardous waste ash masquerading as aggregate, being indiscriminately placed in ball fields, boat slips, and elsewhere. You are seeing a facility that has never demonstrated the ability to meet the proper destruction and removal efficiency standards, the "four nines" standard, even for toluene, the easiest compound to destroy. The most recent water quality inspection report of the facility called it a "accident waiting to happen."

Now if all you have to do is call your residue an aggregate, a potting soil, "gopher dust," whatever, and that gets you out of the system, then basically we have a regulatory system that isn't worth the paper it is printed on. I would just like to clarify something, though. This is not a weakness of the regs or the law in this particular case or in other related cases; this is a failed enforcement effort.

As the chairman's questions indicated, EPA has stipulated since Rita Lavelle's day, since 1983, that facilities, sham recycling facilities that burn high volumes of low-BTu, low heat content waste, must be regulated as incinerators immediately. That policy was reiterated just in January of this year, but not a single enforcement action has ever been taken under these regulations or enforcement policies.

What this has resulted in is essentially a growth industry for sham recycling. Inspiration Copper in Arizona takes in any number of wastes to recycle copper, irrespective of their copper content. The number one Superfund site in the State of New Jersey, Old Bridge Chemical, takes in wastes to produce a pesticide.

Senator BAUCUS. I am going to have to ask you to summarize.

Mr. FORTUNA. All right, if I can summarize, Mr. Chairman.

Senator BAUCUS. Very briefly.

Mr. FORTUNA. In summary, what I would just like to point out to the committee is that unless this committee is vigilant in pursuing the agency to take the necessary enforcement actions of their own standards, to ensure that regulations are issued that provide for equal and proper protection of public health, and unless there is legislation essentially prohibiting such distinctions to be made and essentially requiring EPA to make a proper enforcement report on a periodic basis, what you are essentially going to see is a whole new system operating in this country outside the law.

Thank you, Mr. Chairman.

Senator BAUCUS. Thank you, Mr. Fortuna.

I am a little confused. You are saying that Marine Shale's example is a problem of enforcement. That is, you are saying that the present law is adequate, the present regulations are adequate, but that company is just violating the law. That is essentially what you are saying. Is that correct?

Mr. FORTUNA. That's correct. I mean, essentially, Mr. Chairman, what you are going to have, this committee could enact five more laws——

Senator BAUCUS. Therefore, this hearing is only involved with whether EPA is properly enforcing current law.

Mr. FORTUNA. That is correct. I mean, I think there are a series of problems. Some of them are enforcement-related.

Senator BAUCUS. Let me ask Ms. Warren, do the rest of the panel agree with that statement, that the law is adequate, the regulations are adequate; this problem of recyclers versus treaters is not really a regulatory problem, it is not a statutory problem. It is only a matter of whether the executive branch is properly enforcing current law. Do the rest of you agree with that statement? Ms. Warren?

Ms. WARREN. I don't completely agree with that because I think that if a company reads the law in a way that they can say, "This literally doesn't apply to me," then that is a shortcoming in the law. If EPA has regulations on the books that seem to suggest that what the company is doing is okay to do, but defeats the purpose that the law intended, then I think that there is a shortcoming in the regulations.

Senator BAUCUS. Do you, Mr. Cunningham?

Ms. WARREN. I think there is an enforcement element, clearly.

Senator BAUCUS. Mr. Cunningham, how much is this enforcement and how much is this inadequate regulations and vague statutory law?

Mr. CUNNINGHAM. Senator, before I could answer that I would have to more thoroughly research exactly what the current regulations say, but I think the fact that they are not permitted at this time, I think they need to be permitted, and yet knowing how complicated the full permit process is, I think there should be a graduated scale of permitting such as we have in California.

Senator BAUCUS. Okay. Dr. Vander Velde, what is your opinion?

Dr. VANDER VELDE. I think there are both elements. As we indicated in our testimony, we think Congress does need to clarify

some of the current statutes, but in addition to that, that must be accompanied with very strong enforcement.

Senator BAUCUS. Another question: I would like to clarify, if I can, or sharpen up, maybe, an agreement among you, Ms. Warren, Mr. Cunningham, and Dr. Vander Velde—as I understand you, Ms. Warren, you are saying that all recyclers should be subject to the same standards as treaters of hazardous waste. As I understand Mr. Cunningham, the California system has a flexible system. It is a series system. That is, it depends upon, I guess, the degree of toxicity.

Mr. CUNNINGHAM. The degree of hazard.

Senator BAUCUS. Excuse me——

Mr. CUNNINGHAM. The degree of hazard.

Senator BAUCUS. The degree of hazard——

Mr. CUNNINGHAM. Yes, sir.

Senator BAUCUS [continuing]. Of the waste. Dr. Vander Velde seemed to be a little bit "all or nothing," too—that is, everybody is in the same boat or everybody should be in the same boat. Do you disagree, Ms. Warren, with the California flexible series system, or not?

Ms. WARREN. I don't disagree with that. What I am saying is that processes that pose equal risks should be subject to the same kind of regulation. If they don't pose equal risks, they shouldn't be, but if someone is burning exactly the same wastes for a different purpose, that has nothing to do with whether the risks are different.

Senator BAUCUS. What is your assessment of the California system? Do you like it? Do you have any suggested changes?

Ms. WARREN. No, I don't know any more about it than what I just heard, so I probably should——

Senator BAUCUS. What is your opinion of what you heard?

Ms. WARREN. It sounded like a reasonable idea. If you are trying to encourage recycling, or at least not discourage it, but you still want to achieve your primary purpose of protecting the environment, that is one way to do it. It sounds good, but I would have to look at it more closely before I could say.

Senator BAUCUS. Dr. Vander Velde, what do you think?

Dr. VANDER VELDE. We operate a full-scale——

Senator BAUCUS. The California system, do you——

Dr. VANDER VELDE. In California, we operate one of the largest recycling centers. It operates under full RCRA permit, and we feel very comfortable with that. That's the way it should be.

Senator BAUCUS. I mean, is New York similar to California? Does anyone know? Does anyone know whether New York does anything significantly different that we should be aware of?

Dr. VANDER VELDE. New York does require permits for cement kilns and has permitted cement kilns within the State for burning of hazardous waste.

Senator BAUCUS. Okay. Mr. Fortuna, do you want to say anything in response to an earlier statement that was made this morning? I'll give you a chance.

Mr. FORTUNA. Senator, just because you put the label of recycling on something doesn't make it safe. Just like treatment, just like incineration, just like storage needs to be controlled, so does

recycling. There is opportunity for mismanagement at every turn. That is the plain, simple fact. I mean, the history of the Superfund program indicates what happens when you have recycling that is not regulated.

There is one point, Mr. Chairman, I think that needs to be reemphasized here. We are talking, on one plane, what standards need to be reapplied to recycling. Should it be this standard, that standard, or X, Y, or Z? What is happening out there, and what is always going to happen, there are always going to be people who say that "The RCRA system doesn't even apply to me because I am not a waste manager." They are not even on the plane that we are talking about here.

Senator BAUCUS. We understand that point.

Mr. FORTUNA. That is an enforcement issue.

Senator BAUCUS. That point has been well stated many times this morning. Thank you.

Yes.

Ms. WARREN. Mr. Chairman, I would add one other point: The concern that I expressed about EPA's regulations, what is in them and what they are doing, I can't state too strongly. The Assistant Administrator said earlier, "Well, I guess we came out all right on used oil." They haven't done anything on used oil, and we have a lawsuit that has been argued. We are waiting for a decision on it.

To this day, long after the 1980 and 1984 amendments told EPA to do something about the recycling of used oil, EPA has no regulations even proposed. They have simply done nothing. I don't consider that "coming out okay" on used oil. If that is any indication on how they are going to "come out okay" on regulating recycling, it makes me very uneasy.

Senator BAUCUS. Thank you.

Senator Breaux.

Senator BREAUX. Should we wait, Mr. Fortuna, for the proposed regs—and as EPA said, they would be out in 1989—or wait for other actions to take place, or do we need a legislative fix to RCRA to do it?

Mr. FORTUNA. Senator, I really don't—this particular facility and others like it are not a legislative fix. I think, as you pointed out, EPA is apparently using sort of a "body count" approach to enforcement actions. There are always going to be people, no matter how many laws we pass or how many regulations we put in place, who are going to try to beat the system. That is always going to happen.

There is just no substitute for enforcement actions against specific facilities that violate regulations and laws that are on the books. The policies governing sham recycling date back to Rita Lavelle. I mean, even Rita Lavelle put into place policies saying, "We must enforce and take actions to regulate as incinerators, facilities that operate as such today," and nothing has been done in this area since that time.

So I would say we do not need legislation. We need this committee and the other committees of the House to continue to ride herd on EPA, to make sure they take the necessary enforcement actions against those people who are always going to try to beat the system.

I think there is probably value in amending the statute with regard to the AMC case that the chairman raised, namely that just because you call it recycling doesn't mean you are exempt from the system. There are elements of "discard," if you will, in a lot of recycling activities that there is the need for a statutory clarification of. Unless that is done, there is going to be endless litigation and argument over whether recycling of hazardous waste is covered or not in a certain context, but other than that I would say no.

Senator BAUCUS. Mr. Cunningham, California apparently has one of the strictest regulatory procedures for the regulating of hazardous waste, whether it is for incineration purposes or for recycling. I want to encourage recycling. I think that it is a good thing to do. Do you find that your statutory, regulatory program in California has made it more difficult for recyclers to operate? How many recycling operations do you have in California?

Mr. CUNNINGHAM. I would have to get back to you on that, Senator, and I will. I don't know the exact——

Senator BAUCUS. How about a ball park figure? One? Five? Fifty?

Mr. CUNNINGHAM. I can't even give it to you in a ball park right now.

Senator BAUCUS. Dr. Vander Velde, you have, Waste Management has facilities that do recycling in California. Is it a problem? Is it more difficult? You apparently have facilities that do incineration and those that do recycling both. Are there any problems in saying it is more difficult?

Dr. VANDER VELDE. No. We operate both in California and other States with recycling facilities. In California it is strictly a solvent recycling facility, and we are able to operate there and to operate under the law.

Senator BAUCUS. Mr. Fortuna, you have been called a practitioner of hazardous waste McCarthyism. You must now be the Nation's leading practitioner of——

Mr. FORTUNA. Was that by Senator Simpson?

Senator BAUCUS. No, that was a letter that I had received that was a copy to you. What about the argument that some of you folks, at least some of the companies that are doing the incineration, are charging a lot more than those who are able to take hazardous wastes and destroy them for the purposes of recycling, and that this is all sour grapes by those of you who are charging more to incinerate; that the other guys can do it for a lot less expense, and this is a just a gang-up on the guys who can do it cheaper?

Mr. FORTUNA. Well, I guess the way I would respond, Senator, is if I were Chrysler Corporation and I didn't have to put seat belts, passive restraints, air pollution control devices in my car, I could sell that car for a lot cheaper and corner the market, and in the process I would be endangering the safety of the people in those cars as well as contributing pollutants to the environment. That is exactly what is happening here. The facility obviously can charge less because it is not complying with the RCRA standards applicable to incinerators, never conducted a proper trial burn, never demonstrated destruction efficiencies, disposes of its ash indiscriminately.

Senator BAUCUS. Let me ask you, now, along those lines, Marine Shale specifically when they will testify provides the committee

with a list of all the permits that they say that they are required to follow, which is an impressive list. What is your comment on that? I take it you are saying that they don't do that.

Mr. FORTUNA. Well, that is the only supposed hazardous waste permit I know that was written by people who don't know anything about hazardous waste. It was written by an Air Office in Louisiana, not by the Hazardous Waste Division, which is the only permit I am aware of in the country that does that.

Secondly, just because you have conditions in your permit doesn't mean you meet them. I think as your data indicated, they have no permits for water discharge, they have never met the destruction efficiency standards. There is no verification that they can meet those standards whatsoever, so the numbers exist but unless you verify, unless you comply, unless there is some enforcement, what good do the permits mean?

Senator BAUCUS. Do you have an opinion as to why EPA has not proceeded in this case? If they have air quality violations and water quality violations, and they don't have a permit which they say they don't need, and I asked EPA that question, how far do you have to go before something poses an imminent hazard and threat to human health and the environment?

Mr. FORTUNA. I frankly think it comes down to a combination of cowardice and cronyism. I think there are a number of local factors there in the State that have prohibited enforcement against what is the biggest sham facility in the country, but I think you also have a level of cowardice reflected on EPA's behalf, not only at Dr. Porter's level but in the form of Mr. Tom Adams, who heads up EPA enforcement. Mr. Adams is not an aggressive enforcer, to say the least. In fact, I mean, he and his office have spent more time negotiating scripts in response to answers with Marine Shale than they have investigating or in taking enforcement actions.

Senator BREAUX. Well, I just wanted to say to the chairman how much I appreciate him having these hearings, because I think what we are finding is a whole area that is not being properly handled, and I think there is a lot of blame to go around in a lot of different areas, but I think that the chairman in having these hearings is really getting to the heart and crux of the matter.

I have no more time, but if the chairman would allow you to comment on that——

Mr. CUNNINGHAM. Mr. Chairman, I think I misunderstood Senator Breaux's question about the number of facilities. You were talking about recycling facilities in California?

Senator BREAUX. Right, yes.

Mr. CUNNINGHAM. We have the one cement kiln that is permitted. We have Chem Waste, that has a full permit for handling all kinds of wastes; and we have probably a handful of solvent recyclers permitted in the State.

Senator BREAUX. So the point I was trying to make, is the strict regulatory program that California has an impediment to getting a permit and operating a recycling facility?

Mr. CUNNINGHAM. Senator, we don't believe it is an impediment. We think it is an encouragement, because if a facility has a waste that is barely hazardous, they get a rather quick permit without going through the full-blown permit that Chem Waste had to go

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through, but Chem Waste handles the entire spectrum of hazardous wastes, so it is a graduated scale thing. Rather than take a year and a half to go through the long, laborious permit process, we could probably do one in a couple of months for a facility that is just burning a marginally hazardous waste.

Senator BREAUX. And you also have Chem Fix out there, too, don't you?

Mr. CUNNINGHAM. Pardon me——

Mr. FORTUNA. Mr. Chairman, if I could just follow up very quickly——

Senator BAUCUS. We are going to have to move along here.

Mr. FORTUNA. Okay.

Senator BAUCUS. Thank you very much.

Senator Warner?

OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE STATE OF VIRGINIA

Senator WARNER. Mr. Chairman, I will put my opening statement into the record and pass on questions because I am quite anxious to get to the next panel.

[Senator Warner's statement follows:]

OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE STATE OF VIRGINIA

Good morning, Mr. Chairman, members of the committee. I appreciate having the opportunity to participate briefly in the subcommittee's hearing this morning.

I would like to welcome today an important Virginia constituent who I am pleased to represent in the Senate.

Mr. John W. Roberts is president of the Solite Corporation of Richmond, Virginia. Apart from Mr. Roberts' contributions to the economies and environment of the eastern States in which Solite and its subsidiaries operate, Mr. Roberts is also active in a number of ways in the Richmond community, from serving on the Board of Richmond Memorial Hospital, to serving as director and executive committee member of the Virginia Manufacturers Association.

Mr. Roberts is also a known leader in the engineering and evironmental communities, serving on various societies, institutes and associations related to his business.

More than that, Mr. Chairman, is the fact that Solite, as the largest manufacturer of light-weight aggregate in the United States, fills an important national need through the manufacture of light-weight aggregate, while eliminating in that manufacturing process hazardous wastes produced by others in an environmentally safe and effective manner.

My colleagues may be interested to know that the light-weight aggregate products manufactured by Solite have been used in this very building (Dirksen) and in and on numerous other buildings throughout the area, reducing weights and costs of those projects. In fact, in one of the more successful examples of the use of light-weight aggregate in a federally-funded project, the recent re-decking of the Wilson Bridge—completed some 4 years ago ahead of schedule and under budget—was done with light-weight aggregate.

As Mr. Roberts will testify, Solite has operated for more than 40 years in its current endeavor, and has worked closely with the regulatory agencies charged with protecting health and the environment. Solite has made valuable contributions to that process, is currently regulated in a manner in which many other "recyclers" cannot claim, and welcomes further reasonable efforts to ensure that the activities of others meet the high standards Solite currently imposes upon itself and accepts from EPA.

Mr. Roberts is accompanied today by Mr. Ed Martin, Solite's vice president for production; by Mr. Louis Lawson, research director of Solite's fuels division, Oldover Corporation; and, by Solite's environmental counsel, Jon Jewett, Esquire, whom members of the committee remember well from his staff service here—some with

pride, others with chagrin—but I'm sure all with the knowledge that Solite is well-represented by counsel today.

Mr. Chairman, again, thank you for this opportunity. Mr. Roberts, Mr. Martin, Mr. Lawson, and Mr. Jewett, welcome to the committee.

Senator BAUCUS. Okay. So am I. Thank you very much.

Mr. CUNNINGHAM. Thank you, Senator.

Senator BAUCUS. The final panel is Dr. John Roberts, president of Solite Corporation; Dr. John Chadborne, Systek/LaFarge; Walter Greer, vice president, Manufacturing Services, of Lone Star Industries; and George Eldredge, vice president and general counsel of Marine Shale Processors.

Gentlemen, we thank you for coming today.

Senator Warner, did you want to introduce someone?

Senator WARNER. Thank you, Mr. Chairman. I would like to take a few minutes to recognize a very distinguished Virginian who has, I think, made quite a contribution, not only himself but his corporation, to the subject that we are about to cover today.

John Roberts represents and is president of the Solite Corporation of Richmond, Virginia. Apart from Mr. Roberts' contributions to the economies and the environment of the Eastern States in which Solite and its subsidiaries operate, Mr. Roberts is also active in a number of ways in the Richmond community, a very broad range of activities. He is also known as a leader in the engineering and environmental communities, serving on various societies, institutes, and associations related to his business.

More than that, Mr. Chairman, is the fact that Solite is the largest manufacturer of lightweight aggregate in the United States, and fills an important national need through the manufacture of lightweight aggregate while eliminating— and I stress, eliminating—in that manufacturing process hazardous wastes produced by others in an environmentally safe and effective manner. You may be interested to know that the lightweight products manufactured by Solite have been used in this very building we are occupying today and in the numerous other buildings throughout the area, reducing weights and costs in those projects. In fact, one of the more successful examples of the use of lightweight aggregate is a federally funded project, the redecking of the Wilson Bridge, completed some 4 years ago ahead of schedule, under budget, and done with lightweight aggregate.

As Mr. Roberts will testify, Solite has operated for more than 40 years in its current endeavor and has worked closely within the regulatory agencies charged with protecting health and the environment. Solite has made valuable contributions to that process. It is currently regulated in a manner which many other recyclers cannot claim and welcomes—and I stress, welcomes—further reasonable efforts to ensure that the activities of others meet the high standards Solite currently imposes upon itself and accepts from EPA.

Mr. Roberts is accompanied today by Mr. Ed Martin, Solite's vice president for production; Mr. Louis Lawson, research director of Solite's Fuels Division; and Jon Jewett, Esq., who members of this committee remember with mixed feelings, I think. But in any event, I welcome them all today and I thank the Chair for its courtesy.

Senator BAUCUS. Thank you very much, Senator.

With that introduction, Mr. Roberts, why don't 'you proceed?

STATEMENT OF JOHN W. ROBERTS, PRESIDENT, SOLITE CORP., RICHMOND, VA

Mr. ROBERTS. Thank you, Mr. Chairman. With that introduction, I can cut out about 2 minutes of my talk.

Senator BAUCUS. That's right.

Mr. ROBERTS. Lightweight aggregate is made by heating certain types of shale in a rotary kiln to a temperature of about 1,950 degrees Fahrenheit. This requires a flame temperature in our kilns of about 3,000 degrees, and a long enough kiln and a high enough air flow and gradual enough temperature rise in the product so that at the point of incipient fusion, air bubbles are formed by dissociation of various oxides, causing the material to expand.

We have some samples of the material, Mr. Chairman, and I would like to ask Mr. Jewett to give those to the committee at this time, together with a picture of what we do.

We began burning waste fuel 14 years ago because it had certain important advantages over coal, which is the conventional fuel that we would otherwise use. These advantages are not limited to price. The liquid, high-BTu material that we burn has a lower flash point than coal, produces a more controllable and predictable flame, and—I say this hesitatingly because we are also a coal producer—it has less ash and is a cleaner fuel than coal.

Our permits impose stringent limitations on the materials we can accept, and what we do use are things like residues from solvent recycling—and we are the key to the success of those recycling operations, because we take those residues and use them as fuel—and paint and ink thinners and similar ignitable liquids. We are also subject to other limitations, including maximum chlorine limits of 2 to 2.5 percent. Our air emissions and scrubber water discharges are also regulated by the States in which we operate.

EPA has tested our kilns in Florida and North Carolina and shown a destruction efficiency in those tests of greater than 99.99 percent. We have tested the fines and the scrubber water of all of our facilities and extensively modeled the effect of our emissions on ambient air quality. We are confident that we not only can meet the same ultimate standards required of hazardous waste incinerators, but that what we do has a major advantage over incineration as a method of disposing of these hazardous wastes that we burn.

The parameters that we meet are that our lightweight aggregate kilns have good combustion efficiency because the kiln length is fixed, the fan speed is fixed, both maintaining constant airflow and constant resident time, and turbulence automatically results from the counterflow of raw material coming through the kiln from one direction with the flame injected at a high velocity from the other. The high temperature must be maintained to manufacture our product, and it is easier to maintain a constant temperature in a lightweight aggregate kiln than in an incinerator because of the large thermal mass that we have.

Because of the large body of material coming through the kiln, together with a constant feed of processed material and a constant

flow of fuel, essentially we have a steady state process with every possible variable remaining constant. Incinerators, on the other hand, have varying input and varying operating conditions, depending upon the waste that is put into them. They put waste in the back end of their process near the scrubber; we do not. We use waste only as a fuel that goes through a conventional burner.

The second critical distinction between our kilns and the incinerators is that we burn waste as a substitute——

Senator WARNER. Mr. Chairman, might you inform the witnesses we have a vote, and how the Chair wishes to handle the vote?

Senator BAUCUS. I will go over now.

Senator WARNER. All right, and I will go at this moment also.

Mr. ROBERTS [continuing]. As a substitute for conventional fuel, and if we cease burning waste fuel, we will burn coal instead. Emissions from incinerators result in a net increase in the amount of pollution emitted into the air. For our kilns, switching from coal to waste fuel results in a net decrease in emissions, particularly emissions of sulfur dioxide.

I would like to close by making a statement in answer to the questions that have been asked of each of the witnesses.

Because of the major differences between burning for energy recovery in a lightweight aggregate or cement kiln and the burning for destruction in incinerators, we strongly support a separate recycling permit. Both types of burning should be subject to the same ultimate standards of protection of human health and the environment.

We support the California approach that has been enunciated here, but specific technical requirements should be based on the specific characteristics of each type of device and the materials that are burned in it. We are concerned that the regulations that are now under development may ignore the real differences between energy recovery and incineration, and the differences in the operation and design between lightweight aggregate and cement kilns on the one hand and incinerators and other types of industrial furnaces and boilers on the other.

Mr. Chairman, we are glad to have the opportunity to testify at this hearing and we welcome any questions.

Senator Breaux [acting chairman]. Thank you, Mr. Roberts.

Next we will hear from Dr. Chadbourne.

STATEMENT OF JOHN CHADBOURNE, VICE PRESIDENT FOR TECHNOLOGY AND REGULATORY AFFAIRS, SYSTECH/LAFARGE, DALLAS, TX

Dr. CHADBOURNE. Thank you. It is a pleasure to be here. I am John Chadbourne, vice president for technology and regulatory affairs with Systech Corporation.

LaFarge Corporation is the largest manufacturer of portland cement in North America. Systech is a wholly-owned subsidiary of LaFarge Corporation. Many people know us as General Portland. We currently operate three Part B permitted hazardous waste TSD facilities in the States of California, Kansas, and Ohio. Three other facilities in Alabama, Indiana, and Michigan, utilize hazardous waste fuels under interim status. We have been using hazardous

waste fuels in our cement kilns to replace coal since 1979. Through these programs, safe management of over 150 million gallons of hazardous waste has been provided through combustion in cement kilns.

LaFarge Corporation is a member of the Portland Cement Association. Systech Corporation is a member of the Hazardous Waste Treatment Council. We have worked for many years with these associations and with a number of State and Federal agencies to develop responsible hazardous waste management programs and appropriate regulations. Rather than seeking shortcuts or exemptions, we have consistently applied for permits to manage hazardous waste and to control emissions.

LaFarge and Systech have made a commitment to long-term programs which protect public health, our workers, and the environment. Cement kilns have been shown to be an exceptionally good technology for managing hazardous waste. Combustion temperatures exceeding 3,000 degrees Fahrenheit and exposure to temperatures above 2,000 degrees Fahrenheit for 3 to 5 seconds assures virtually complete destruction of organic hazardous waste. Chlorinated materials are converted to potassium and sodium chloride—table salt—and these chlorides can be beneficial to maintain cement product quality. Toxic metals such as lead are converted to insoluble oxides. These metals are stabilized in the finished cement product or in the residual known as cement kiln dust.

With cooperation of the California Department of Health Services and other State agencies, we have extensively studied the properties of cement kiln dust and determined it does not exhibit any characteristics of hazardous waste. The natural scrubbing of the cement manufacturing process makes it possible to tightly control air emissions with existing, highly efficient electrostatic precipitators and bag houses. In fact, burning of hazardous waste in cement kilns can result in lower emissions, especially with regard to sulfur oxides.

In addition to destroying hazardous wastes, cement kilns are also very effective resource recovery facilities. This applies both to energy recovery and to materials recovery. LaFarge routinely replaces one-third to one-half of the fossil fuels used in many of our kilns with hazardous waste fuels. We have one kiln which has been burning 100 percent hazardous waste fuels for over a year.

Waste water which does not contain organic contaminants can also be used to replace raw water in wet process kilns. Metals contained in the waste water become constituents of the cement product or cement kiln dust. Iron, aluminum and silica are necessary ingredients in the cement manufacturing process. Foundry or smelter residues which may exhibit characteristics of hazardous waste can be effectively used as cement manufacturing ingredients, replacing iron, aluminum and silica from other raw materials.

Systech and LaFarge believe that hazardous waste management in incinerators, industrial furnaces, and boilers should be regulated, regardless of whether energy recovery, materials recovery, or simply destruction of the waste are involved. From an environmental perspective, the purpose of the hazardous waste activity makes little difference. Consistent regulations and well established permit

programs are essential to maintain safeguards necessary to protect public health and the environment.

The permit program provides a vehicle to ensure that adequate waste analysis plans, procedures to prevent hazards, contingency plans, training programs, and other safeguards have been addressed. For example, Systech is one of the few companies with on-site laboratories at each facility which analyzes every shipment of hazardous waste before we allow it to be unloaded. We also do extensive prequalification analyses before we allow a generator to bring a shipment to the plant.

Even though people know we do these analyses, we do encounter loads which have to be returned to generators because they contain too much chlorine, PCB's, reactive materials, too much metals, or not enough heat content. Some years ago when we rejected loads at the Paulding, Ohio facility, many of the generators would simply say, "No problem. We will just take it down to the steel mill." We rejected one load with about 500 parts per million of PCB's and later found they had sent it to someone else to be burned. When we asked about it, we were told they didn't find any PCB's. But the truck sample we retained sure had PCB's in it.

There is less of that today, but most operators of industrial furnaces know very little about what is really in the hazardous waste fuels they receive. Some people feel waste analysis isn't very important. After all, they are just going to burn it, but what if you have a spill or a fire or drench an employee? We think it is very important to know what you are dealing with.

We have also been surprised at what people will do when they are exempt from regulation or don't feel they need permits. Some years ago Peerless Cement in Detroit decided to use sewage sludge to replace water in their slurry feed. When the slurry was fed into the cold end of the kiln, the organic contaminants evaporated. The stink was unbelievable for miles around. They sure made the papers that night.

There is another story about a cement kiln slurry tank that caught fire and the local fire department was called in to put it out. It seems the cement company was doing resource recovery, replacing raw water with nonhazardous bilge water from a Navy tanker. They pumped over a bit of jet fuel with the bilge and, being lighter than water, it collected at the top of the tank. In our view this is not responsible waste management. Good regulations, thorough permitting, and waste analysis would help, but then these are two examples that don't even concern hazardous waste. These were nonhazardous wastes.

I would now like to make a few comments concerning hazardous waste legislation and the regulations which Federal and State agencies write to implement the laws. The issues are complicated and there are many special interest groups. The agencies are under tremendous pressure to quickly develop comprehensive regulations, knowing that their knowledge is incomplete and in some cases erroneous. Many companies work hard to avoid being regulated because some of the regulations don't make sense. If you can avoid being caught up in a time consuming, costly bureaucratic nightmare, wouldn't you also seek to be exempt?

Systech and LaFarge have had a difficult time explaining why we want to be regulated and obtain permits when exemptions and shortcuts are available. The answer is that we are committed to long-term programs. We expect these activities will be increasingly regulated in the future and we want to participate in the development of good regulations.

This is not an easy process. We find disagreement between member companies in the Portland Cement Association and member companies in the Hazardous Waste Treatment Council. The issue of economic advantage often seems to outweigh environmental protection. I have heard people say, "If I have to do it, you should have to do it, too," even if it doesn't make environmental sense.

Senator BREAUX. Dr. Chadbourne.

Dr. CHADBOURNE. Yes?

Senator BREAUX. We are going to have to take a break. Senator Baucus is on his way back, and I am going to go to vote. As soon as he returns, we will continue with your statement.

The committee will be in recess.

[Recess taken.]

Senator BAUCUS. The hearing will come back to order. I apologize to the witnesses and to those who are in attendance for the interruption. There is a rollcall vote going on. I assume Senator Breaux will return as quickly as he can, and I assume that Senator Warner will also be able to return.

Our next two witnesses are Mr. Greer and Mr. Eldredge. Mr. Greer?

Mr. GREER. Dr. Chadbovrne needed to finish.

Senator BAUCUS. Oh, I'm sorry. You have not finished? I'm sorry.

Dr. CHADBOURNE. I was almost there.

Senator BAUCUS. All right.

Dr. CHADBOURNE. I think where I had left off is, we were discussing why a company would want to be regulated when it is a very difficult process, and the answer is that we are committed to long term programs. We expect that these activities will be increasingly regulated in the future, and we want to participate in the development of good regulations.

This is not an easy process. We find a lot of disagreement. The issue of economic advantage often seems to outweigh environmental protection. I have heard people say, "if I have to do it, you should have to do it, too," even if it doesn't make environmental sense. On the other side we have people seeking total exemption, avoiding permits and the public process, or arguing that it costs too much to analyze waste or to continuously monitor operating conditions and emissions.

The Federal and State rules have so many caveats, it is very difficult to determine what is or is not a hazardous waste. There are listed wastes and characteristic wastes, but listed wastes don't necessarily exhibit a characteristic of hazardous waste. If a characteristic waste is used as an ingredient in a process, I am told it is no longer a waste. If a listed waste is used in a process, some people believe all the residues and maybe even the products should be subject to the "derived from" rule, and when one looks at the delisting process there is another whole set of problems.

Then there are Appendix VIII constituents. Most of the materials we receive are not on Appendix VIII. Most of the constituents in Appendix VIII are not present in waste we receive. We don't know how those inconsistencies develop. The entire area of determining what is or is not a hazardous waste needs a great deal of work.

Systech and LaFarge have also been very surprised at some interpretations of the rules which have recently come forward to promote additional treatment capacity. For example, we are told that burning directly from transportation vehicles does not require storage and no RCRA permits are necessary to burn from trucks.

We also have quite a number of existing facilities who filed Part A permit applications on or before May 29, 1986 to obtain interim status for storage tanks they plan to build. When we pointed out that most of these facilities do not have State and local permits authorizing construction, we are told that only hazardous waste control statutes apply. An existing storage facility turns out to be anyone who filed a part A permit application, even though they may have no experience in meeting regulatory requirements or safe operating procedures for managing hazardous waste.

In conclusion, Systech and LaFarge believe that hazardous waste management activities should be regulated through a rigorous permit system, regardless of whether energy or materials recovery are involved. In fact, our Los Robles facility in Kern County, California is a permitted resource recovery facility under California rules. We must meet the same standards anyone would need to meet for a RCRA Part B permitted treatment, storage, and disposal facility, even though we are a resource recovery facility. Preparing the permit application and undergoing the permit review process ensures that we develop adequate procedures to protect the public health, our workers, and the environment.

Thank you.

Senator BAUCUS. Thank you, Dr. Chadbourne.

Mr. Greer.

STATEMENT OF WALTER L. GREER, VICE PRESIDENT, MANUFACTURING SERVICES, LONE STAR INDUSTRIES, HOUSTON, TX

Mr. GREER. Thank you, Mr. Chairman.

Lone Star Industries is a major cement producer in the United States, and I appreciate the opportunity to discuss with you today the burning of hazardous waste in cement kilns. We call this material "recycled fuel" and I will use that term in my testimony, if I may.

Recycled fuel is used in the cement industry for legitimate replacement of primary fuel for reduction of manufacturing costs. Therefore, we don't feel that our use of this material is sham recycling. The use of recycled fuel is a serious endeavor to a cement producer. The user faces added business risk, additional capital investment, a need for increased attention to process detail, and focused attention from regulators and the public. Therefore, a lot of cement producers don't care to participate in this activity.

Lone Star currently operates one wet process kiln on recycled fuel at an average fuel replacement rate of 18 percent, and I would

like to point out that we pay for that fuel. The permitting process for another kiln is underway.

Dr. Chadbourne has previously mentioned the unique conditions within cement kilns that provide for really good destruction of the components of recycled fuel. These conditions include the high flame temperatures, the long residence times, the thermal inertia, and the alkaline environment that absorbs the hydrogen chloride that results from combustion of chlorinated hydrocarbons.

Test burns in several cement kilns have consistently demonstrated destruction efficiencies of 99.99 percent or greater for the organic constituents of these fuels. These same test burns have produced barely measurable quantities of products of incomplete combustion, and there was essentially no generation of dioxins that could be measured.

Again, Dr. Chadbourne has described for the committee the fate of the metals and the chlorine in the cement kiln, and I won't continue and describe that further, but I would like to point out that in no case of which I am aware has any cement kiln dust been reclassified as a hazardous waste as a result of burning recycled fuel in a cement kiln.

This situation is really self-regulating. In no case that I can imagine would any cement producer want to generate a hazardous waste. The risk and liabilities and costs associated with the generation of hazardous wastes far outweigh any economic benefits that can be derived from using recycled fuel.

There are about 250 cement kilns in the United States, and only a few of these units burn recycled fuel. Virtually all these kilns have very efficient particulate collection devices. A prudent installation for handling recycled fuel will provide for spill containment, emergency shut-downs, redundancy, and other safeguards for health and the environment. It appears to me that cement kilns may be an underutilized resource for the destruction of some classes of hazardous waste.

Lone Star recognizes the need for regulating and permitting of the combustion of recycled fuel in cement kilns. These regulations should cover storage, handling, burning, solid wastes, and stack emissions. These regulations and permits should reflect, however, the unique scientific and engineering facts associated with cement kilns or other combustion devices. All industrial furnaces and commercial incinerators should not be regulated or permitted identically, yet the pending Federal regulations will apparently treat industrial furnaces and commercial incinerators identically.

Beyond this error in regulatory judgment, Lone Star and some other cement companies are troubled by at least three specific elements of the new regulations. First, those that understand the fuzzy world of risk assessment better than I do, tell me that the risk assessment procedure used by EPA considers fuel oil as the baseline for estimations of increased health risk. Since coal is the primary fuel in almost all cement kilns, the EPA baseline assumptions would therefore appear to be seriously flawed.

Second, many cement kilns that otherwise would be good candidates for destruction of hazardous waste will not be able to meet the continuous carbon monoxide emission standards, even under baseline conditions, when using 100 percent primary fuel. EPA ac-

knowledges this fact, yet for reasons that are not clear at all to the cement industry, the EPA doggedly insists that carbon monoxide be the primary measure of complete combustion. The net effect of this regulation will be to reduce the number of potential facilities that can burn recycled fuel.

Finally, the application of the "derived from" rule to the cement kiln dust that is generated during the burning of hazardous waste will preclude almost all cement kilns from burning recycled fuel. The delisting standards are so much more severe than those used to evaluate an unlisted waste that even without burning recycled fuel, some cement kiln dust will not meet the delisting criteria. The cost and risk that would accrue to the cement plant manager while waiting for the lengthy delisting process to conclude are simply too great. An illogical extension of the "derived from" rule might require the delisting of the portland cement itself.

We do not object to playing on Dr. Porter's level field, but we do suggest that perhaps there are some different games going on on that field. We don't have a problem with meeting the same regulations for destruction of waste within any combustion device, but it is how this destruction is demonstrated that we have problems with.

Thank you for the opportunity to testify here today. I have a couple of reports that, if the committee doesn't have them, I would like to leave them for the record. It is an EPA report on hazardous waste combustion in industrial processes, cement and lime kilns, and a report by Clean Sites on the subject of burning hazardous waste in cement kilns, if I may leave these for you.

Senator BAUCUS. They will be accepted for the files.

Mr. Eldredge.

STATEMENT OF GEORGE B. ELDREDGE, VICE PRESIDENT AND GENERAL COUNSEL, MARINE SHALE PROCESSORS, INC., BATON ROUGE, LA

Mr. ELDREDGE. Good morning, Mr. Chairman. My name is George Eldredge. I am the vice president and general counsel of Marine Shale. I thank you for your invitation to be here today.

Mr. Chairman, in an interview with The Washington Post two weeks ago, the Regional Counsel of Region VI of the EPA stated:

> If Marine Shale can manufacture products using hazardous wastes as fuel and material, that is really a new generation of technology that will be useful to the American public and might make the incineration industry obsolete.

Well, that is what we do. MSP is in the business of manufacturing aggregates and getting rid of hazardous waste permanently, under a stricter air permit than any commercial incinerator permit operating today.

We didn't just get into the business yesterday of making aggregates. The management and top supervisory personnel of Marine Shale have been in the aggregate business almost 20 years, since 1969. Like any other reputable American manufacturers of products sold to the public, the materials produced at our plant must be suitable for use as a product.

The fact that MSP is in business to produce a product is just what separates it from the incinerator industry. Incinerators are

designed to manage waste, and they don't do it very well. The MSP process has been designed to produce a product and it gets rid of a waste. That means a bigger reaction chamber, bigger oxidizers, much longer reaction times and residence times, to name but three differences.

MSP does much more than burn waste. Just burning waste will not make a suitable product. The technological advances made by MSP in materials handling, processing techniques, and most particularly process equipment, provide the most carefully controlled combustion conditions in the world. This technology allows MSP to use hazardous waste as a new resource to make a safe product, without generating any new waste or polluting the air.

This is all accomplished under strict regulations and permits. MSP must comply with the EPA general facility standards. These are the subparts A through L in 40 C.F.R. 264 and 265, the same standards applied to incinerators. The only difference is that we are not under subpart O, which is an air quality provision.

The State of Louisiana had Marine Shale perform trial burns, the same type of trial burns an incinerator would have to comply with, and after doing so it held public hearings, and after holding public hearings it issued an air quality permit which is one of the strictest in the country. In fact, it is stricter in many ways than the current part D requirements for commercial incinerators.

Frankly, I wonder. Commercial incinerators today are operating for the most part under interim status. They have no standards. How anybody can say that Marine Shale is not regulated is totally ignoring the facts.

Senator Breaux, I don't know how we can say this other than to say, we have the strictest permit in the State of Louisiana. We operate under it. We are controlled continually. The EPA and the State of Louisiana are at our site continuously and ensure that we comply with that air quality permit. That includes continuous monitoring. It includes a lot of things that are not even required today of the commercial incinerators, including the one operating in North Baton Rouge, Louisiana.

MSP makes no residuals. All our byproducts, including process water, scrubber water, kiln dust, are all routed back into the process and reused to make aggregate. Whether they are hazardous or not doesn't make any difference. We reuse them. At the same time, the organics are eliminated and all the toxic materials become inert, using the same processes described by these gentlemen on the panel.

This is much different from the incinerator process. If a drum is sent to a landfill or to an incinerator, the only incentive the operator has is to do it at the lowest possible cost. What is worse, an incinerator doesn't reduce the volume of the material. In fact, it creates a greater volume of waste because they need vast amounts of scrubber water.

Incinerators contaminate thousands of tons of clean water each day. That water then has to be injected into RCRA deep wells or simply discharged into our rivers. The 2,800 tons a day of contaminated waters generated by Rollins/North Baton Rouge is discharged directly into the Mississippi River. That is the drinking

source for the City of New Orleans. If this is not the real loophole, I don't know what is.

That is the real difference between an incinerator and MSP. MSP has an important economic incentive of producing a safe product. MSP eliminates waste where incinerators create more waste. Despite its attempts to stop the land disposal of waste, Congress has been stymied because disposers have not found safe alternatives. MSP is proof that solid materials can be reused to make safe products.

As Senator Simpson stated about Congress, "We are not in the business of aiding one business group or another." The testimony today supports that recycling is the future. It needs to be encouraged and it needs to be regulated. MSP is in total agreement.

By all accounts, the technology developed by MSP is the most innovative in the world. We invite you to send your staff or other appropriate officials to the MSP facility. Have them come unannounced. Have them watch the materials being fed into our kiln. Have them watch the aggregate fall at their feet. Have them take samples. Have them report to you as to whether we do what we say we do. If we do, then we think you should support us in recycling. If we don't, shut us down. It's that simple.

Thank you.

Senator BAUCUS. Thank you very much.

Gentlemen, to what degree do you think you should be treated the same as treaters?

Dr. CHADBOURNE. I think there is a lot of value in the RCRA permitting process. I think there is a lot of value in having to write detailed plans and training programs and procedures to prevent hazards, and I think there is a great deal of detail in the review process. We have learned a lot as we have done this. We have had a lot of suggestions made by the regulatory agencies on how to improve our programs.

Even though the permitting process is very time consuming and costly and very difficult, we think there is a great deal of value in going through that permitting process. We think it is necessary to provide the assurance that the public needs that the facilities are safe.

Senator BAUCUS. Well, you didn't really answer my question. To what degree should you be treated the same as treaters? How far? There are prior witnesses today who have said that whether one recycles or whether one just treats, discards, disposes, that depending upon the level of hazard they should all be treated the same using the same standards. Do you agree to that?

Dr. CHADBOURNE. Yes and no. There is a difficulty in the standards themselves. For example, hydrogen chloride has been brought up. Wet scrubbers are the technology that is used for an incinerator. If they didn't have a wet scrubber, the hydrogen chloride would go right out the stack. All right? They have a relatively small amount of gas that is being controlled, and the standard is 4 pounds an hour or 99 percent control. Now we find some cement kilns that get better than 99 percent control and other cement kilns that don't.

EPA has addressed this by looking at a specific risk analysis. They are saying, "What is a reasonable level of hydrogen chlo-

ride?" With a very large facility with a much larger volume of gas, the actual concentration of hydrogen chloride in our stack gas is lower than it would be on an incinerator, but you don't have this 99 percent removal. So if you take the same standard and you say that's the standard that must apply, the people in the incinerator business say, "Great. Put a wet scrubber on the back of this thing." It really doesn't make any sense to do that.

Senator BAUCUS. Mr. Roberts.

Mr. ROBERTS. Mr. Chairman, the net result must be the same, as has been said I guess by everybody in this room today. The result we are after is the same standards for human health and the environment. The fine point that we point out is that in lightweight aggregate kilns the steady state condition is such that it is difficult if not impossible to not do what we ought to be doing, and the rationale behind that is the steady state conditions that we must maintain.

For instance, as the cement industry has quite a lot of lime which soaks up the chlorine, the lightweight aggregate industry has a situation in which it is impossible to make lightweight aggregate without having more excess air than you really need, which is a unique situation in the lightweight aggregate industry. As far as the fluxes are concerned, in the lightweight aggregate we don't have the amount of lime that the cement industry does but the raw material that goes into making lightweight aggregate must have somewhere between 16 and 20 percent fluxes in it, which are the calcium and magnesium and sodium and potassium and other materials which also have the ability of soaking up some of this chlorine.

Senator BAUCUS. Mr. Greer.

Mr. GREER. I agree that we all must meet the same standards for protection of health and the environment. I have the problem, as I mentioned in my testimony about how some of these things are measured, such as with the carbon monoxide standard and with the application of the "derived from" rule to the CKD. That's where we have the great difficulty.

Senator BAUCUS. Regardless of whether the facility is a treater or a recycler?

Mr. GREER. Yes, sir.

Senator BAUCUS. Okay. Mr. Eldredge?

Mr. ELDREDGE. I agree, absolutely.

Senator BAUCUS. The same standards?

Mr. ELDREDGE. The same standards.

Senator BAUCUS. The same hazardous standards?

Mr. ELDREDGE. I think that both, whether you are recycling the material, whether you are generating it, whether you are the person that incinerates it, anybody that handles that type of material, that subjects the environment to it, should be subject to the same standards.

Senator BAUCUS. The same tests, burn standards?

Mr. ELDREDGE. Absolutely.

Senator BAUCUS. All the way down the line. What is your reaction, any of you, to the California statute? Should we adopt that or something similar to it?

Mr. ROBERTS. As I understand it from the testimony given here today, it has flexibility in terms of permit requirements for cement and lightweight aggregate kilns as compared to an industrial furnace that has less ability to have a uniform, steady state condition, and on that basis I agree wholeheartedly with the California approach.

Senator BAUCUS. Anyone else?

Mr. GREER. It seems like a reasonable approach to me, from what I have heard today.

Senator BAUCUS. Then you would, I suppose, to some degree feel that the Congress should address this American Mining Congress decision. Is the result not too much ambiguity, too much uncertainty as to what recyclers must and must not do?

Mr. ELDREDGE. I think that one thing that you need to understand is that we are not the only types of industries that recycle that which used to be considered a waste into some type of product or use it as a fuel. Here about 10 years ago Du Pont brought a facility into De Lisle, Mississippi, and they had one big problem. They were going to generate a tremendous amount of a toxic waste and they didn't have anyplace to send it. Ordinarily it would have gone into a landfill but Du Pont, being a good corporate citizen, didn't want to make that material if they were going to have that waste.

Borg-Warner moved in right across the Pearl River in Mississippi and said, "Well, let's look at this. We might be able to use that material that you were going to throw away as a resource." They subject that material to various chemicals and heat processes, some of which could be defined as incineration if you get very broad in your burning definition, and they turn that into paint pigments for making paint that is used all over this country, so Mississippi benefitted by having two major chemical plants come in, one because the other could use its waste. That is something that has to be addressed when you are trying to decide how far you are going to go in making some sort of distinction between recyclers.

Senator BAUCUS. Thank you.

Senator Breaux.

Senator BREAUX. Thank you very much. I thank the panel for their appearance.

Mr. Eldredge, on page 13 of your testimony you say Marine Shale is fully in compliance with all Federal, State, and local laws and regulations applicable to recyclers and meets Louisiana air quality standards that its competitors cannot. I don't understand how you can say that.

I have a letter we received today from EPA, a notice of violation of the Clean Air Act. The inspection that they did exhibited nine violations of greater than 20 percent opacity, with a maximum of 48 percent opacity. We have a letter from the State of Louisiana dealing with water pollution control violations which I am not going to go into, but it is a 5 or 6 page letter documenting some very serious water pollution control standards that the State of Louisiana says, unless changes are made, that you have been operating in violation of the current water discharge permit, which does authorize processing of hazardous waste, and they must either

revise the permit to legitimize this activity or deny the permit and take legal action to close the facility.

So when you say on page 13 that everything is lovely and you are in compliance with all the regulations and rules of local, State, and Federal Government, that is not true. I have two notices sitting on my desk, both of air and water quality violations, and you are not even regulated as an incinerator of hazardous waste. Do you deny that these violations are correct?

Mr. ELDREDGE. Senator, as far as I know, the only document I have seen from the State is an interoffice memo that was provided to me by the press, which the State of Louisiana has never discussed with Marine Shale Processors. I have no idea what is in it officially, other than the fact that the press made it available to me. If the State has concerns, they should have—I understand that was written in February—they should have brought them to us immediately.

Absolutely, we should be complying with the law. To our knowledge, when this was written, we——

Senator BREAUX. You have no knowledge of the State's actions on all of this 6 or 7 page memo that we have?

Mr. ELDREDGE. That's correct. We have had a modification request in to the State of Louisiana for a water quality permit since February of 1987. We have pushed and pushed and pushed to try to get that through because it has more stringent standards and testing requirements in it than our current permit. For whatever reason, the State has not acted on it.

Senator BREAUX. Are you telling me that nine serious violations of the water pollution requirements that the State has set out and spelled out, and the press has, and Congress has, and you have, that your company has never been notified by the State of Louisiana of these concerns officially?

Mr. ELDREDGE. That is true.

Senator BREAUX. What about the EPA notice of violation of the Air Quality Act?

Mr. ELDREDGE. Senator, apparently you were provided with it before I was.

Senator BREAUX. It was mailed to you: Mr. Jack Kent, president, Marine Shale Processors. "Notice of Violation. Dear Mr. Kent: . . ."

Mr. ELDREDGE. Senator, I believe you. The United States mails don't work as quickly as——

Senator BREAUX. So you don't have that yet, either?

Mr. ELDREDGE. No, sir. As soon as we get it, we will respond to it.

Senator BREAUX. So, as far as you are concerned, you are still in compliance with everything?

Mr. ELDREDGE. As far as we know. Senator, if we have not complied with the law, then we were wrong. That's all I can tell you, and we will not do it any more.

Senator BREAUX. Let me ask you this: Does Marine Shale consider yourself a business that is in the hazardous waste destruction business, or do you consider yourself as a business that produces a byproduct that is for sale?

Mr. ELDREDGE. We are in the business of manufacturing a product.

Senator BREAUX. All right. The 1986 figures that we have from Tulane University indicate that in 1986 you made $100,000 producing the aggregate, and that in 1986 you were paid $12.8 million for burning hazardous waste. Now do you consider that a successful business, if you are telling this committee that you are in the business of producing aggregate?

Mr. ELDREDGE. Truthfully, Senator, we had no taxable income because all of that $12.8 million went to overhead.

Senator BREAUX. That's fine. I'm talking about you are making $12.8 million that people are paying you to burn hazardous waste, and you are making a byproduct and you are making $100,000 off of it, and you are telling this committee that you are really in the business of producing aggregate for profit? The numbers are astounding. They leap out at you and knock you over. How can you justify that?

Mr. ELDREDGE. Nobody would be in the sugarcane business in Louisiana if the Government didn't subsidize it. We ask the generators of this material——

Senator BREAUX. We are not talking about sugarcane. They have all kinds of problems. Maybe everybody else has a problem. I'm talking about your company specifically: $12.8 million paid to your company for burning hazardous waste. You don't have a hazardous waste incineration permit because you say you don't need one. That is not your business, because you make $100,000 from producing an aggregate, and you are selling the aggregate, according to the documents, to a company that has the same post office box in the same town that you operate in. Can you explain that?

Mr. ELDREDGE. Well, that was supplied to you by somebody that has misread the facts.

Senator BREAUX. Let's find out if the facts are correct. Is this document that says that you are selling to the same company at the same address, is that not correct?

Mr. ELDREDGE. No, sir.

Senator BREAUX. What is wrong with it?

Mr. ELDREDGE. It is the same address. We have sold approximately 600 tons out of 15,000 tons that we have sold to Huey Stocksill, Inc., who happens to be our registered agent in Mississippi, who happens to have the same address.

Senator BREAUX. You say on page 4 of your testimony that the end product that you have is a benign product. Who tests the benign product? Does the State? Does the EPA test it? Do you test it?

Mr. ELDREDGE. We have it tested by West-Paine Laboratories, which is a facility licensed by EPA in the State of Louisiana for testing of this sort. It has also been tested by the State, by the Environmental Protection Agency, and by many of the Fortune 500 companies that use our facility. To our knowledge, we have never seen anything about any of the material that we have sold that indicates that it would have any hazardous characteristics.

Senator BREAUX. The indications that we have from some of the tests that were conducted for you show that benzene destruction is 59.18 as opposed to 99.99, that methylene chloride, the destruction rate is 99.47 instead of 99.99. Toluene is 99.31 instead of what is required. Do you contest those figures?

Mr. ELDREDGE. I don't contest the figures. I contest what they mean. Those were taken out of context. If you had been provided the actual stack testing results instead of a synopsis, you would have seen that the company, Walter Moore and Nelson, a very respected company out of New Orleans that performed the stack test in conjunction with the State of Louisiana, stated:

> Note that the DRE's are directly related to the input concentration. For any compound exceeding one pound per hour input, the DRE exceeds 99.99 percent. For those compounds input in minute amounts, less than one pound per hour, the ability to accurately measure the associated low output seriously affects the DRE calculations. When the initial input is less than five hundredths of a pound per hour, it is virtually impossible to demonstrate a 99.99 percent DRE, given present analytical constraints. This obvious relationship is the reason for the selection process presented in the incinerator DRE regulations.

Those three materials that you indicated were input in the following amounts: benzene, .049, which is——

Senator BREAUX. Well, I appreciate all that. It will be part of the record, but are you saying that the test was incorrect?

Mr. ELDREDGE. I am not saying the test was incorrect. I am saying the information you were presented did not present all the information to you, to tell you what the actual truth of the matter is.

Senator BREAUX. Okay. I know I am over the time, Mr. Chairman. Could I have one more question?

Senator BAUCUS. It's all yours.

Senator BREAUX. The charts—you have charts galore—one of the charts that you have is based on the Woodward-Clyde Consultants that you have and that you presented in your testimony. They say in their report to your company on the tests: "Samples were collected and composited over a 3-hour period, 2:30 to 5:30." I take it they sent you the results on March 30, 1988 of this test. You probably knew about the hearings by then. They did a 3-hour test. You hired them to do the test. There is no EPA supervision of that test. There are no Louisiana air quality people that are there at that test, and then you present this as the truth, the whole truth, and nothing but the truth.

The other report that says you don't burn benzene to the extent that you should is a flawed test. This test with your hired consultants, three hours, after you know about these hearings, I guess is the good test.

Mr. ELDREDGE. Senator, the stack test was not flawed. The report given to you that didn't give you the full report was what was flawed.

Senator BREAUX. What about the Woodward-Clyde Consultants test? Three hours, no supervision?

Mr. ELDREDGE. Senator, Woodward-Clyde is one of the largest engineering consulting firms in the world. If you want to imply that somehow we bought them off——

Senator BREAUX. I am not saying that. Was there any EPA supervision there when the tests were conducted? Any State of Louisiana people who were there when you had the test conducted?

Mr. ELDREDGE. No, sir.

Senator BREAUX. Well, Mr. Chairman, I think that in holding these hearings we have the classic example, and I am not saying

that Marine Shale is doing anything illegal under the law. I don't know that. I am not saying that. That is for some other forum to decide, but I think that there is a loophole that is in the RCRA law, despite the 1984 amendments, that allows a company that makes $12.8 million burning hazardous waste to say that they are not really in that business; that they are really in the business of producing an aggregate.

Like I said before, I don't care if you are burning hazardous waste to produce gold bars or baby food. The burning of the hazardous waste itself is the act that should be regulated, regardless of what comes out at the end.

Mr. ELDREDGE. I agree with the Senator. I think that regulation is necessary.

Senator BAUCUS. Thank you. Thank you, Senator Breaux.

Gentlemen, I want to thank you for coming today. It is clear we have a problem that is going to have to be resolved, and I think we also agree that regardless of whether we are talking about recyclers, treaters or whatever, the classification is that the public health has to be protected and environmental protection has to be met, and we have to address the problem of the bifurcated system that we have. We will attempt to do so the best we can in the RCRA reauthorization bill that will come before this committee and hopefully pass this year.

One final administrative matter on another subject. This committee has had some difficulty in getting the prepared statements submitted to the committee on time, so in the future let the world know that the chairman will exercise his responsibility and right to not seat a witness if the testimony is not presented to this committee 24 hours in advance of the hearing.

Thank you. The hearing is adjourned.

[Whereupon, at 11:50 a.m., the subcommittee adjourned.]

[Statements submitted for the record follow:]

STATEMENT OF
J. WINSTON PORTER
ASSISTANT ADMINISTRATOR
FOR
SOLID WASTE AND EMERGENCY RESPONSE
BEFORE THE
SUBCOMMITTEE ON HAZARDOUS WASTES AND TOXIC SUBSTANCES
OF THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE

April 14, 1988

Mr. Chairman and Members of the Subcommittee, I am J. Winston Porter, Assistant Administrator for the Office of Solid Waste and Emergency Response. I am responsible for the implementation of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). I appreciate the opportunity to discuss EPA's statutory and regulatory authority concerning recycling under Subtitle C of RCRA.

I would like to begin by describing a problem that the Agency intends to rectify by issuing our final regulations applicable to the burning of recycled hazardous waste for energy burning in early 1989. Since 1981, the burning of hazardous waste to destroy hazardous constituents has been regulated by our incinerator standards (40 CFR Parts 264 and 265, Subpart O). As I will explain later in my testimony, we have undertaken a phased approach to regulation of the burning of recycled hazardous

waste for energy recovery. Because we have not yet issued final standards that address emissions from the burning of hazardous waste for energy recovery in industrial boilers and furnaces, an incentive for certain owners and operators still exists to tell regulatory authorities that they are burning for energy recovery when, in fact, they are burning for the purpose of destruction of hazardous constituents. EPA considers this activity to be "sham recycling."

We do want to underscore from the outset that we in no way want to discourage sound recycling practices which already exist or could potentially be utilized in industrial markets today. Recycling has increased over the past decade, and it is in everyone's best interest to continue this trend at increasing rates. At the same time, however, we must make every effort to minimize unsafe and irresponsible "sham recycling" practices.

The regulation of any recycling activity is very complex. Therefore, I will discuss with you the regulatory challenges created by the congressional statutory delegation of authority of EPA to regulate recycling under RCRA; provide more detailed information on the burning and blending regulations; and discuss means of creating regulatory incentives for environmentally protective recycling of hazardous wastes.

I. OVERVIEW

"Recycling" includes any kind of reuse of a secondary material (i.e., a material that is not the primary output of a production process), as well as processing of a secondary material for reuse. Many industries reuse their own secondary

materials, e.g., chemical companies use distillation bottoms from one process as an ingredient in another process, oil refineries introduce oil-bearing sludges into their refining process, etc. Also, other facilities may accept secondary materials from a number of unrelated generators to reclaim valuable materials (e.g., solvents, precious metals), or to produce waste-derived "products" (e.g., fuels, fertilizers, etc.).

EPA's task under RCRA Subtitle C is to regulate hazardous waste, which is a subset of "solid waste". The Agency has therefore devoted considerable thought to establishing a regulatory interpretation of what Congress meant by the term "solid waste". The statutory definition, found in RCRA Section 1004 (27), refers to solid waste as a material being "discarded". Legislative history implies that what "is done, or is going to be done", with a material helps determine whether it is a waste. This is a basic and fundamental problem EPA faces in administering RCRA Subtitle C. The Agency must sort through different kinds of recycling activities to define those which constitute waste management. In doing so, the Agency has attempted to minimize its dependence on ascertaining a person's intent, but some elements of intent of the materials generator cannot be avoided in defining "waste."

We are still involved in a legal debate over what Congress meant by "discarded material". This terminology raises the issue of the nature and extent of authority EPA has been delegated over recycling. Some would argue that if a person uses or

intends to use a secondary material for any purpose, it is not "discarded," and so is not a waste. EPA believes, however, that certain uses or recycling practices amount to discarding a material, and therefore are within our jurisdiction to regulate. We have embodied this claimed jurisdiction in our recently proposed regulatory definition of solid waste.

Another issue EPA has faced is a continuing tension between the need to regulate recycling activities within our jurisdiction vs. the possible impacts of regulation (especially permitting) on recycling. Recyclers have to survive in their own product market, and RCRA Subtitle C regulation tends to place them at a competitive disadvantage vs. producers of materials from non-waste materials (or from non-hazardous waste). Many recycling practices, however, potentially pose serious risks to human health and the environment. Certainly EPA wants wastes to be recycled properly, but the standards we have developed for the traditional waste management techniques (i.e., incineration, landfilling, etc.) may not be appropriate for regulating recycling. Therefore, certain hazardous waste recycling practices remain unregulated, or partially regulated, even today.

Finally, when certain materials that are normally regulated are exempt from regulation based on their being used in a certain way, a potential exists for abuse. Some parties may attempt to avoid disposal costs by taking advantage of an exemption, even if they do not really qualify. For example, if some wastes may be burned for their energy value in exempt units,

someone may send wastes with little or no energy value to an exempt unit to avoid disposal costs. This is known as "sham recycling," i.e., disposal of waste under the guise of recycling. EPA must determine if parties claiming the various recycling exemptions are in fact actually obtaining significant product value from the secondary materials they are handling. These determinations are necessarily facility and material specific.

EPA's Subtitle C authority is limited to regulating "solid waste". Therefore, we must seek other means by which to address forms of recycling that are not considered wastes. An example may be to use Toxic Substances Control Act (TSCA) authority.

II. DEFINITION OF SOLID WASTE

As I noted above, under RCRA a material must be a 'solid waste' before it can be regulated under Subtitle C. 'Solid waste' is defined by statute as being a "discarded material". Although the statute contains language and legislative history indicating that Congress did not mean to limit EPA's authority solely to materials that are discarded by being thrown away, the definition implies that certain limits exist on the the extent of EPA's authority to regulate hazardous waste recycling. Potential problems exist, for example, over who has to discard, where production stops and waste recycling or management starts, and whether failure to recycle toxic contaminants in a material constitutes discarding of those contaminants.

Complicating these problems is the recent Court opinion, American Mining Congress v. EPA [824 F.2d 1177 (D.C. Circuit 1987)], where a divided panel of the D.C. Circuit Court held that EPA had exceeded its authority by defining solid waste in a way that asserted authority over certain types of in-house, on-going production processes. The opinion can be read, however, to say that a material has to be literally thrown away before it can be regulated as a waste under Subtitle C. Under this broad interpretation of the opinion, EPA would lack authority under RCRA, for example, to regulate various types of recycling such as burning hazardous wastes for energy recovery, or reclamation of wastes in non-continuous, unrelated processes unless the materials being recycled were thrown away. Air emissions could still be regulated under the Clean Air Act, as well as potential product regulation under TSCA. Each of these practices may have significant potential to harm human health and the environment if not carefully controlled and have been involved in past damage incidents. These activities are covered in RCRA Sections 3004 (q) and 3004 (l), yet EPA's authority over all of these activities is now being questioned.

The Agency has invested a great deal of resources on these and other related questions, and has issued a rather complex proposed regulatory definition of solid waste. The definition seeks to distinguish on-going production from waste recycling, that is, to determine whether a secondary material is more product-like or waste-like. Also, the definition retains control over recycling activities that involve elements of

discard, such as placing wastes on the land, or burning them. The comment period on the Notice of Proposed Rulemaking closed on March 23. We received over 100 comments, many of which contend that EPA narrowly interpreted the American Mining Congress (AMC) court decision. We are planning a workgroup meeting later this month to discuss the comments and how to best proceed to the final regulation. In the absence of more definitive guidance from Congress, however, the Agency intends to fully implement the national policy as embodied in RCRA to prevent environmental degradation due to wholly uncontrolled, unregulated hazardous waste management practices.

I have attached as an Appendix to my testimony examples of heretofore unchallenged activities which industry representatives are now claiming are excluded from regulation under the AMC opinion. While EPA does not interpret the opinion in this way, we anticipate further legal challenge on this issue.

III. CONTROLS ON BOILERS AND INDUSTRIAL FURNACES BURNING HAZARDOUS WASTE

A. Regulatory History

The hazardous waste management facility standards promulgated on May 19, 1980, controlled the burning of hazardous waste in incinerators but exempted burning in boilers and industrial furnaces for the purpose of energy recovery. EPA did not promulgate controls for burning for energy recovery at that time because the Agency had not investigated the scope of the practice, the devices and wastes involved, and the risks

that may be posed to human health or the environment. In 1982, however, EPA initiated a comprehensive, multi-million dollar field testing program to evaluate emissions and health risks posed by devices burning hazardous waste for energy recovery. The Agency accelerated those efforts when the Hazardous and Solid Waste Amendments of 1984 (HSWA) explicitly required the Agency to address the issue.

Although the 1980 rules did not regulate the boiler or industrial furnace burning hazardous waste fuels, the storage and transportation of listed wastes and sludges were subject to storage and transportation controls prior to burning or other recycling.

To ensure that hazardous waste that had low heating value and typically destined for incineration was not burned in a boiler or industrial furnace in the guise of energy recovery, the Agency developed a sham recycling policy in 1983. (See 48 FR 11157 March 16, 1983). That policy stated that ordinarily if a hazardous waste having less than 5,000 Btu/lb heating value were burned in a boiler or industrial furnace, it probably was not burned for its fuel value but, rather to avoid the cost of incineration. Unfortunately, the sham recycling policy was extremely resource intensive to enforce because of the facility-specific nature of these determinations and, therefore, its effects were not uniformly successful when examined on a national basis.

B. New Regulations

On January 4, 1985, EPA promulgated revisions to the

regulatory definition of a solid waste. Among other things, these amendments provide more objective distinctions between devices that EPA considered incinerators, boilers, or industrial furnaces.

On November 29, 1985, EPA promulgated administrative controls for marketers and burners of hazardous waste fuels, and prohibited hazardous waste fuels from being burned in anything but an industrial boiler and industrial furnace. These rules were developed to address the most pressing problem -- burning of hazardous waste in non-industrial boilers such as apartment and office buildings in the interim until technical controls could be developed to control emissions. Further, all hazardous waste fuel became subject to full RCRA storage and transportation requirements.

In late 1986, the Agency completed the bulk of the field testing program needed to develop appropriate controls for boilers and industrial furnaces burning hazardous waste. Those controls were proposed on May 6, 1987. The controls would apply to boilers and industrial furnaces burning hazardous waste irrespective of the purpose of burning: energy recovery, materials recovery, or destruction. This would greatly lessen the opportunity for sham recycling because regulatory coverage would no longer depend on the purpose of burning or a person's intent.

The new rules in many respects would be similar to those that currently apply to hazardous waste incinerators. For

example, a trial burn would generally be required to demonstrate destruction of organic constituents in the waste feed, and the general facility standards applicable to all hazardous waste treatment, storage, and disposal facilities would apply (e.g., financial assurance, emergency procedures, and personnel training). However, the rules would go beyond the existing incinerator standards to also control emissions of Products of Incomplete Combustion (PICs) and metals. We plan to propose this Spring amendments to the incinerator standards to control PICs and metals to strengthen them to conform to the proposed boiler and furnace standards. Until these incinerator amendments are promulgated as final rules, we plan for incinerator permit writers to apply those PIC and metal controls to incinerators under the omnibus authority of HSWA.

The proposed boiler and furnace rules would use risk assessment to tailor certain provisions of the standards to reduce the burden on permitting officials and the regulated community. For example, many boilers that burn small quantities of hazardous waste do not pose unacceptable health risk (on the order of 10^{-5} or 10^{-6} incremental lifetime cancer risk to the maximum exposed individual) and so would be exempt from the permit standards. See RCRA 3004 (q)(2)(B)(authorizing special standards for de minimis burners). These limited quantity burners would be required, however, to notify EPA (or the State) and keep records that document that they do not burn quantities of waste greater than specified in the rule.

To implement the boiler and industrial furnace controls as quickly as possible, we proposed to require compliance during interim status (i.e., for facilities in existence when the rules are promulgated, the period of time between the date of promulgation and award of a Part B permit) with those controls that could be self-implemented, including certain provisions of the emissions controls for PICs, metals, and hydrogen chloride.

C. Current Activities

We are planning this Spring to reopen the comment period on several provisions of the May 6, 1987, proposed rule. We plan to request comment on minor revisions of several provisions including controls for emissions of PICs, metals, and hydrogen chloride. We also plan to request comment on whether particulate emissions should be controlled to the levels controlled for hazardous waste incinerators. Some of these revisions were suggested by commenters on the proposed rule. We are suggesting other revisions to ensure that, when we propose to amend the incinerator standards this Spring to address issues including emissions of PICs and metals, the standards for all combustion devices -- boilers, industrial furnaces, and incinerators -- would be virtually identical. Given that many of the standards are risk-based, the standards applicable in a given exposure situation should be the same. The risk posed by a unit emission of a pollutant does not depend on the device burning the waste or the purpose of the burning.

Given the common goals and provisions of the amendments we are developing for the incinerator standards and the revisions we are developing to the boiler and furnace proposed rule, we plan to publish notices on these rulemakings in the Federal Register simultaneously. We also plan to promulgate both rules simultaneously in early 1989.

IV. INCENTIVES TO ENCOURAGE ENVIRONMENTALLY ACCEPTABLE RECYCLING OF HAZARDOUS WASTE

Although one of RCRA's objectives is to encourage recycling, Subtitle C provides few opportunities for the Agency to vary regulatory standards in a way that encourages recycling while still providing necessary environmental protection. The only area where EPA is directly provided this type of desirable flexibility is for recycled oil. In all other cases, if a material is defined as a solid and hazardous waste, the full panoply of Subtitle C regulation normally follows as a matter of course even if it discourages otherwise-desirable types of recycling.

For example, many experts believe that the best way to manage hazardous metal-bearing sludges is to resmelt them to recover contained metals, and generate a relatively inert slag. A number of primary smelting concerns have expressed interest in this type of activity, but are unwilling to obtain a permit not because storage and emission standards cannot be met, but because of the prospect of facility-wide corrective action. Admittedly, the prospect of exempting facilities from

requirements of this type raises difficult questions of policy and trade-offs, but EPA sees potential merit in a scheme comparable to that for recycled oil where certain recycling enterprises could be exempt from particular RCRA requirements such as permitting, provided they meet environmentally protective standards and perform corrective action relating to the actual recycling activity they perform.

V. CONCLUSIONS

EPA has been implementing Subtitle C, we believe, to the limits of our current legal authority. The statutory definition of "solid waste" has created a great deal of controversy and litigation, and remains a major challenge to EPA implementing the RCRA program. We have, however, moved to control those recycling practices that appear to pose serious risks, including, as I described today, establishing a new program to control hazardous waste burning in boilers and furnaces.

EPA has also attempted to deal with "sham recyclers" who are disposing of hazardous waste under the guise of recycling. As I described today, enforcement cases in this area are problematic, but we will continue to take actions against those persons who try to abuse the system. In the long run, the best approach is to develop standards that do not depend on a person's intent. This is what we have proposed for burners. We are, of course, limited in removing all distinctions based on intent by

the statutory definition of solid waste, and the recent AMC decision in fact raises the possibility that intent could become more, not less, important in determining a person's RCRA regulatory status.

Finally, I recognize that some states require permitting of all recyclers. As I noted earlier, there may be certain recycling practices warranting some, but not full-scale Subtitle C control, for example under a permit by rule approach. However, the Agency may need to seek greater flexibility from Congress for designing regulatory controls and permit requirements for those recycling practices that are different than traditional waste management techniques and cannot be addressed under current statutes.

Thank you for your attention. I look forward to your views on these issues and would be happy to answer any questions you have.

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APPENDIX

EXAMPLES OF SPECIFIC PRACTICES INDUSTRY REPRESENTATIVES ARE CLAIMING TO BE EXCLUDED FROM REGULATION AS A RESULT OF AMERICAN MINING CONGRESS OPINION

1. Spent solvents are generated and sent to a commercial recycler for reclamation. This is the type of situation that triggered the damage incidents of such sites as Chem Dyne and Silresim facilities. Emissions from distillation also can pose a hazard.

2. Spent potliners from primary aluminum production are sometimes reclaimed to recover their fluoride values. The potliners are in some cases quite hazardous because of high concentrations of cyanide, and are frequently stored in the open in uncovered piles before they are reclaimed.

3. Emission control dust from steel production, waste K 061, contains metals such as zinc which can be recovered in other (i.e., non-steel manufacturing) smelting processes. The dust contains leachable concentrations of lead and cadmium, among other metals. It is frequently stored in the open in piles before shipping and before smelting.

4. Certain electroplaters send their waste water treatment sludges to an electric arc smelter for metal recovery. The electroplating and smelting processes are not related in any way, but certain persons argue that the wastewater treatment

sludges are not being discarded if they are being reclaimed in this way.

5. The petroleum industry generates spent solvents with high Btu values that they burn as auxiliary fuels in boilers. Spent solvents often have high concentrations of toxic metals, and few boilers have air pollution control equipment to prevent toxic metals from being emitted. Section 3004(g) appears intended to control this activity because it commands EPA to regulate burning of all hazardous waste fuels including those generated and burned on-site, yet petroleum industry representatives are arguing that these spent solvent fuels aren't being discarded and so are not wastes.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 7 1988

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Honorable Max Baucus
Chairman
Subcommittee on Hazardous Wastes
and Toxic Substances
United States Senate
Committee on Environment and
Public Works
Washington, DC 20510-6175

Dear Mr. Chairman:

Enclosed please find EPA's responses to your questions of May 10, 1988, regarding the Subcommittee's hearing on "sham" recycling. If I can be of further assistance please let me know.

Sincerely,

J. Winston Porter
Assistant Administrator

Enclosures

RECYCLING QUESTIONS

Question 1: On July 31, 1987, the United States Court of Appeals ruled that EPA cannot regulate in-process secondary materials but its regulatory authority is limited to materials that are "discarded" by virtue of being disposed of, abandoned, or thrown away. How does this decision affect EPA's interpretation of the current definition of solid waste? In what situations will firms now escape regulation (because of the Court decision) that would have been subject to RCRA rules prior to the decision? What health and environmental damages are likely to occur if these firms can continue to operate without RCRA regulations?

Answer: EPA published a notice in the Federal Register on January 8, 1988, which stated the Agency's position regarding the Court of Appeals opinion (both enclosed for your information). EPA's interpretation, we believe, was a fair reading of the opinion in light of the Court's concern that EPA claimed authority over material employed in on-going manufacturing processes. (See page 1193 of the opinion.) Therefore, EPA took what a number of commenters have characterized as a narrow view of the opinion--arguing that most existing EPA rules were not affected--and proposed three rule changes. The first proposed change would exempt secondary materials recycled in certain "closed loop" recycling systems, the second would exempt certain hydrocarbon containing secondary materials recycled on-site in petroleum refineries, and the third would exempt nonlisted sludges and by-products that are recycled in certain ways. Health or environmental damages are unlikely to result from these proposed changes. (The subcommittee should be aware, however, that even before the Court opinion, EPA had already limited its authority over recycling. For example, EPA's existing rules state that unlisted by-products and sludges are not wastes when they are reclaimed. This is because these materials might not be considered to be "discarded" when they are destined for reclamation. The result, however, is that these materials are unregulated when stored before reclamation. Since the Court held that even with these exclusions in the rules EPA still had exceeded its authority, these practices will continue to go unregulated.)

The exemptions, and in effect EPA's interpretation of the court opinion, were proposed for public comment. The comment period closed March 23, 1988. The great majority of the comments are from industry trade associations which argue that EPA has misread the opinion and should take a much broader reading of the opinion, i.e., to exclude many more materials and activities from jurisdiction, or even, as some commenters suggested, to simply exclude any material from regulation if a person intends to recycle it in some way. If EPA were to adopt these suggestions, health or environmental damages could indeed result. Commenters argue that unless a material is literally first thrown away, abandoned, or disposed of, it cannot be a solid waste under RCRA and therefore cannot be regulated, no matter how hazardous the materials may be. They maintain that even materials that are placed directly on the land for recycling purposes, or that are burned in boilers or industrial furnaces, are not solid wastes. Examples of such activities are the road oiling at Times Beach, Missouri, or the waste-as-fuel practices that caused Congress to enact RCRA section 3004(q). These activities, in the commenters' view, would be outside the scope of RCRA because the materials are not being thrown away or abandoned; they are being recycled.

NOTE: The attachments referred to have been retained in committee files.

Reclamation of spent materials is another area commenters argue is beyond the Agency's authority under the Court's opinion, for the same reason. Off-site reclamation has led to environmental damage incidents, examples being the Chem-Dyne and Silresim damage sites, and some of the sites are now included on the National Priorities List. Finally, smelting firms are now starting to accept sludges from non-smelting industries--for example, electroplating sludges and steel industry emission control dusts--and are arguing that these materials are not wastes because they are not being discarded. This smelting, when conducted properly, can be a sound recycling method for these wastes. However, some of the sites involved in these recovery practices have had storage and air pollution problems that have led to environmental damage, and, in the commenters' view, EPA cannot regulate these activities under RCRA to make sure the recycling is conducted properly.

In short, under the reading of the opinion that these commenters are urging, the Agency's authority over recycling would be essentially non-existent. It would be limited to materials that are first thrown away, abandoned, or disposed. But people do not throw away wastes and then retrieve them from disposal units for recycling; they recycle them directly. Furthermore, even if there is an actual class of materials that are retrieved from disposal for recycling, the ultimate environmental effect is the same whether or not a material is first thrown away, retrieved and recycled, or is recycled directly. Times Beach is just as contaminated whether or not the still bottoms were thrown away first and then spread on the roads, or were spread on the roads directly.

The Appendix to this submission includes practices commenters on the January 8, 1988, notice claim to be beyond EPA's authority and, therefore, excluded from regulation no matter how harmful, as well as a list of 82 damage cases EPA considered in promulgating its rules for recyclers in January 1985. (The Subcommittee should note that many of the practices commenters claim to be outside RCRA jurisdiction due to the court opinion are the very practices that prompted EPA to promulgate regulations in this area.) We do not believe the court meant to exclude these activities from RCRA regulation, but given the legal ambiguity of the decision, another legal challenge could result in such an outcome.

This possibility is not merely hypothetical. Over the Memorial Day weekend, the American Mining Congress (AMC) and the American Petroleum Institute each filed motions with the District of Columbia Circuit asking the Court for a writ to enforce the Court's mandate. They view the Agency's January 8 proposal as not complying. The American Mining Congress even is seeking for the Agency and its officials to be held in contempt. Their argument to the Court is that anything that is not thrown away, abandoned, or disposed of is not a waste. They thus are seeking from the Court an order that takes virtually every recycling practice, including those that have caused substantial environmental damage, out of RCRA authority. (A copy of the AMC's motion is attached.)

While we believe that Congress did not intend to exclude from RCRA jurisdiction recycling practices that are analogous to waste treatment and disposal, and that in fact have caused serious environmental damage, we must point out to the Subcommittee that the opinion does contains language that could and has been read (as indicated above) to exempt most if not all

materials that are recycled. (See, for example, pg 1190 where the Court states, "In sum, our analysis of the statute reveals clear Congressional intent to extend EPA's authority only to materials that are truly discarded, disposed of, thrown away, or abandoned;" see also pg 1192 where it states, "To the contrary, a fair reading of the legislative history reveals intimations of an intent to regulate under RCRA only materials that have truly been discarded," and also pg 1193 where it states, "We are constrained to conclude that, in light of the language and structure of RCRA, the problems animating Congress to enact it, and the relevant portions of the legislative history, Congress clearly and unambiguously expressed its intent that "solid waste" (and therefore, EPA's regulatory authority) be limited to materials that are "discarded" by virtue of being disposed of, abandoned, or thrown away.")

Question 2: Do recyclers and treaters currently operate in a manner that provides equal health and environmental protection? If not, which aspects of their operations result in different levels of protection? What steps would be necessary for EPA to ensure equal protection for treaters and recyclers? What aspect of the statutory language cause EPA the greatest difficulty in developing and implementing equally protective RCRA regulations for treaters and recyclers?

Answer: Currently, the hazardous waste rules generally regulate storage and transport of hazardous waste in the same way, whether it is to be recycled or disposed. However, most recycling devices (i.e., solvent stills, reclamation tanks) are exempt from regulation. Therefore, certain of the existing EPA rules tend to favor recyclers as compared to waste treaters.

Since 1980, EPA has evaluated a number of recycling practices and has gradually regulated those practices that appear to pose the highest risks. For example, in January 1985, EPA promulgated rules that regulate the direct placement of hazardous waste on the land (without incorporation into a product) as land disposal. More recently, EPA proposed air emissions controls for solvent reclaimers (February 5, 1987) and for boilers and furnaces (May 6, 1987).

For those recycling activities within EPA's jurisdiction, then, EPA has demonstrated it will regulate the activities that it deems to pose a hazard. The statutory language that has created problems for EPA, however, is the RCRA definition of "solid waste." By using the term "discarded materials," Congress created an ambiguous jurisdictional boundary for RCRA, resulting in the Court of Appeals' opinion discussed above.

Question 3: Are recycling controls or a recycling permit necessary to ensure that recycling is done in a manner that protects the public health and the environment? What effect would recycling controls or a permit have on current and future use of recycling? How can such a program be developed without discouraging recycling?

Answer: EPA currently has rules that regulate and permit many hazardous waste recycling practices; a large number of additional recycling facilities will be brought under regulation and permitting when EPA finalizes its May 6, 1987 proposed rules for boilers and industrial furnaces (assuming that the Agency's authority is not restricted to the more narrow definition of materials first thrown away, abandoned, or disposed of, in which case the

boiler and furnace rules would apply to a null set). While EPA believes that most of these practices require some regulation, at the same time, the Agency believes that some of these practices, when conducted properly, can be environmentally sound. The present statute allows such flexibility only for recycled used oil, and even then to a limited degree. Other hazardous waste recycling must be regulated just as if it is normal waste treatment, and this creates a disincentive for firms that may be able to recycle properly hazardous waste. For example, a primary smelter that wants to burn limited quantities of electroplating waste currently must obtain a full RCRA permit, including the obligation to conduct facility-wide corrective action. Most such facilities, when faced with such large potential liabilities and expenditures, will opt not to accept the waste. With the emphasis on discouraging land disposal and on hazardous waste minimization, we should attempt to develop a strategy that encourages sound recycling of hazardous waste.

Question 4: What type of prior approval does EPA require in determining if a firm is a legitimate recycler or is exempt subject to RCRA Section 3001? What specific criteria does EPA currently follow in making decisions on whether a waste is exempt? How do States make these decisions in the absence of EPA decisions? What States now regulate recycling, and how do these systems operate?

Answer: First, many "legitimate" recyclers are currently subject to regulation under RCRA Sections 3001-3005. Many of these recyclers in fact are subject to the same notification and interim status requirements as are waste treaters. A recycler who manages secondary materials in such a way as to not have a solid waste, however, does not need prior approval from EPA to claim the exclusion. This is because if a material is not a solid waste, EPA has no RCRA jurisdiction over the material or the recycler. (EPA does require, in 40 CFR 261.2(f), the person claiming such an exemption to maintain all records necessary to support the exemption claim. The burden of proof in enforcement actions is on the person claiming the exemption. Unfortunately, the Court opinion may now create uncertainty in such cases.)

The criteria for the exclusions are stated in the regulations and accompanying preamble discussions. The criteria vary but some of the most far-reaching exclusions are: materials used directly in production processes, without reclamation, burning, or other processing are not solid waste; and materials reclaimed in "closed loop" systems are not solid wastes.

States make exclusion decisions based on the same criteria as does EPA. Most States have been authorized to implement the January 4, 1985, rules for recyclers, and so use the same regulations and preamble discussions as would EPA. Some States have not adopted all of the EPA exclusions, or they regulate EPA-excluded materials under standards less stringent than the hazardous waste rules. For example, California regulates recycling in a tiered fashion, and includes recyclers in its system that federal rules currently exclude. Likewise, New Jersey regulates precious metals reclaimers and other EPA-excluded recyclers.

Question 5: How many decisions does EPA make every year on waste exemptions?

Answer: Since the great majority of these decisions are made by the States, and a lesser number by the Regions, it would be very difficult for EPA to estimate the number of exemption decisions made each year. Without conducting a survey of the States, a rough estimate is that EPA answers in the range of 200-1,000 such questions per year.

Question 6: How consistent are EPA's decisions among Regions on waste exemptions? Does EPA always reach the same conclusion for two firms with similar wastes and processes? What is the basis for this conclusion?

Answer: Since all decisions are based on the same rules and preambles (mostly the January 4, 1985, rules), EPA expects most decisions to be consistent across the Regions and States. EPA has also prepared and distributed a guidance document containing hundreds of examples and explanations of how its recycling rules operate in specific circumstances. Many times, however, situations that appear to be very similar turn out to be slightly different, and this may cause different regulatory outcomes. Persons who believe a State has not properly interpreted the rules may request an opinion from the Region; EPA headquarters provides technical guidance to the Regions and States on request.

Question 7: How much time and resources does EPA spend making waste exemption decisions?

Answer: As explained above, since these decisions are made by the Regions and States, EPA cannot provide firm estimates of the number of such decisions, or the time spent on making such decisions. EPA headquarters does become involved in the more difficult decisions, i.e., when a Region or State requests assistance. By far the most time-consuming types of questions are the RCRA jurisdictional determinations, i.e., questions of whether a material is a solid waste. As an example, EPA headquarters spent approximately 100 hours each on two complicated cases (one case involved reuse of spent acid in steel making and the other involved burning of chlorinated materials in three diverse processes.) The absence of clear jurisdictional criteria in the statute places EPA too often in the position of deciding, on a case-by-case basis, whether a facility or material is within the scope of RCRA.

As a final note on case-by-case determinations, many of the commenters on the January 8, 1988, proposal suggested that under their reading of the Court's opinion, the most important factor in jurisdictional determinations should be a person's intent, i.e., if a person intends to recycle a material in some manner, it is not subject to RCRA. If EPA adopted such a reading, all recycling determinations would become resource-intensive case-by-case determinations. EPA would have to prove that persons did not intend to recycle a material before RCRA regulations applied, and this would obviously be a tremendous resource burden on EPA and the States. Most importantly, under such a view of RCRA, recyclers would remain outside regulatory control until EPA could prove an intent to "discard," i.e., to prove a material would not be recycled. Before such a showing could be made, however, serious environmental damage could already occur. (See the Appendix to this submission for examples of practices that some claim to be outside of RCRA jurisdiction.)

Question 8: Will EPA's rule for boilers and industrial furnaces be similar to the regulations that currently apply to hazardous waste incinerators? If not, where will they be different and why? Will both rules specify the same emissions levels for metals, PICs, HCl, carbon monoxide, POHCs, and residual handling?

Answer: The rules that EPA will (re)propose this summer for boilers and industrial furnaces would apply the identical emissions limits for metals, PICs, HCl, carbon monoxide, and POHC destruction and removal efficiency (DRE) to those that apply (or will apply) to hazardous waste incinerators. Some provisions of the proposed boilers and industrial furnance rules, however, would be different from the incinerator rules. As specifically authorized by Section 3004(q), burners of extremely small quantities of hazardous waste fuel generated on-site would be conditionally exempt from regulation because the risk posed by such burning, absent regulatory control, would be acceptable. The exempt waste quantities would amount to less than one percent of the fuel burned, and owners and operators would be required to notify EPA that they are small quantity burners and keep records of the quantities of all fuels burned. In addition, residues from many boilers and industrial furnaces burning hazardous waste would be exempt from regulation under the so-called Bevill amendment. We have currently interpreted the exemption to apply when hazardous waste is burned for energy or materials recovery, except when: (1) the device burns or processes less than 50% Bevill materials (e.g., coal, cement kiln raw materials, or ores or minerals); and (2) a boiler cofires hazardous waste with oil or gas. The rules for boilers and furnaces that will be proposed this summer would request comment on a more rigorous test of the applicability of the Bevill amendment. To remain within the scope of the Bevill amendment under this interpretation, an owner or operator would be required to determine on a case-by-case basis that the level of toxic constituents in the cogenerated (i.e., hazardous waste plus normal feedstocks) residue is not significantly greater than the levels in the baseline (i.e., without hazardous waste) residue. Finally, the proposed boiler and industrial furnace rules would automatically waive the trial burn required to demonstrate the DRE of toxic organic compounds in the waste for boilers that operate under special operating requirements. Field test data indicate that when boilers operate under these conditions (e.g., at least 50% of the fuel must be fossil fuel; the waste must have a minimum heating value of 8,000 Btu/lb (similar to low grade coal); flue gas carbon monoxide levels are less than 100 ppm), DREs of at least 99.99% are always achieved.

Question 9: When does EPA expect to promulgate the waste-as-fuel technical standards?

Answer: EPA expects to (re)propose the technical standards for boilers and industrial furnaces in July 1988 and to promulgate the standards in summer 1989. As noted above, the reading of the AMC opinion urged by the Mining Congress and American Petroleum Institute would make these standards meaningless because they would apply to virtually nothing.

Question 10: How soon after promulgation will boilers and furnaces carry out their test requirements and be permitted with a Part B permit? When does EPA expect all permits to be in place? How will EPA determine if a facility is in "interim status"?

Answer: The rules will become effective within six months of

promulgation. Permit writers will begin calling in Part B permits on a priority basis at that time. In the interim, owners and operators would be required to comply with substantive emissions controls during interim status. A boiler or furnace can attain interim status if: (1) it is in existence as a hazardous waste facility when the final rule goes into effect; and (2) the applicant submits a complete RCRA Part A application to the permitting authority within 90 days of the date of promulgation.

The rule would require compliance with emission limits for metals, HCl, carbon monoxide (to control PICs), and particulates within 24 months of promulgation of the final rule. EPA expects to issue approximately 200 boiler and furnace RCRA permits under these rules. It is expected to take two years to issue each of these permits based on experience with incinerator permits. The actual time required to issue a permit depends on the quality of the application, the complexity of the site, and the level of funding provided for permit processing. Part B applications will be requested in priority order starting in early 1990 assuming final promulgation of the regulations in mid-1989, and funding for application processing is available.

EPA plans to enforce interim status requirements for boilers and furnaces as has been done with incinerators operating under interim status. This generally involves annual onsite inspections. However, some inspections for smaller sites may be once every two years.

Question 11: Dr. Porter, you concluded your testimony by asking that Congress give EPA the flexibility to design regulatory controls and permit requirements for recycling practices that differ from traditional waste management techniques. Do you believe EPA presently has enough flexibility to regulate recyclers by, for example, promulgating regulations such as the controls for boilers and industrial furnaces proposed on May 6, 1987?

Answer: For the most part, EPA does have enough flexibility to regulate boilers and furnaces. These devices present risks to health and the environment largely analogous to incineration, and we are developing regulations and permit requirements similar to those already in place for incinerators. Many recycling practices, including a limited subset of burning devices, in contrast, pose minimal risks and/or are not appropriately regulated by standards developed for treatment or disposal devices. Also, RCRA permitting, with its facility-wide corrective action requirements, can act as a tremendous disincentive to developing new recycling capacity. EPA has exempted or deferred regulation of certain recycling practices (e.g., fertilizer use) because it was our assessment that application of full Subtitle C controls would prohibit the practice, and this might not be justified by the risks posed.

A more flexible regulatory program for hazardous waste might be appropriate in some instances; it could be patterned after the special legislation enacted for used oil that is recycled (RCRA Section 3014), where EPA has authority to develop standards that vary from the existing Subtitle C standards, and where some recyclers would be eligible for a statutory permit-by-rule.

Question 12: Dr. Porter, won't EPA's proposed rules for boilers and industrial furnaces be similar to the regulations that currently apply to

hazardous waste incinerators? Won't those regulations encourage recyclers to manufacture non-toxic products by using hazardous waste as fuel and material?

Answer: The rules proposed for boilers and furnaces on May 6, 1987 were in many respects similar to regulations that currently apply to incinerators. The products and residuals that boiler and furnace operators produce when using hazardous waste as a fuel or a feed material are often less toxic than was the hazardous waste originally because the toxic organics have been substantially destroyed. However, each product or residual must be evaluated based on its own constituents and properties to determine if it is hazardous, and whether it is a solid waste. The subcommittee should note that products derived from hazardous wastes listed by the Agency as inherently waste-like are not exempt from regulation. So, for example, products made from listed dioxin waste could not be sold openly as commodities.

APPENDIX - PROCESSES CLAIMED BY COMMENTERS TO BE OUTSIDE RCRA JURISDICTION

Industry representatives generally disagree with the Agency's application of the term "discard," claiming that EPA is continuing to regulate recycled materials that are beyond its jurisdiction. Some commenters describe specific recycling processes and request that these processes be excluded from regulation as a result of the AMC decision. Following are examples of the recycling processes that commenters claim to be outside RCRA.

1. Onsite and Offsite Recycling. Commenters claim that the Agency should not distinguish recycling activities by location of the reclaimation process. They state that transportation between the sites of generation and recovery does not constitute discard. Recycle of scrap metal, solvents, spent acids, and precious-metal-bearing wastes were specifically mentioned as being affected by this distinction since they are typically recycled offsite. Many such facilities have been found to pose environmental problems, i.e., air emissions, groundwater contamination, soil contamination, fires, etc.

2. Batch Tolling. This involves an agreement between the generator of the waste (usually precious-metal-bearing) and the recycler under which a portion of the recycled material's value is retained by the recycler as a fee. Commenters contend that under such a contract, both parties are accountable for the material, guaranteeing that spills or other improper disposal will not occur. Improper handling could result in contamination of groundwater, surface water and soil with cyanide that is frequently a constituent in the waste, if the materials are not handled properly.

3. Storage. Commenters claim that storage before recycling does not constitute discard and exclusions to the definition of solid waste should not be limited to materials stored in tanks. Some commenters claim that temporary storage on the ground of in-process secondary materials is beyond EPA's RCRA authority. One commenter claimed that materials stored in surface impoundments, are outside of EPA's authority, so long as any hydrocarbon recovery was intended.

4. Burning for Energy Recovery. Commenters request that secondary materials burned for energy recovery or used to produce a fuel be excluded from the definition of solid waste. Materials burned include listed and characteristic (toxic) hazardous wastes whose combustion could release hazardous constituents to the air.

5. Spent Solvent Recovery. Solvents are reclaimed onsite or sent to a commercial recycler for reclamation. The solvents are listed hazardous wastes and when handled improperly can contaminate ground water, surface water, soil and ambient air at recycling facilities. Damage incidents such as Valley of

the Drums and Chem Dyne resulted from solvent reclamation activities.

6. Precious Metals Recovery. According to commenters, precious-metals-bearing hazardous wastes are valuable, always recycled, and, therefore, never discarded or released to the environment. Precious-metal-bearing wastes include spent catalysts, circuit board scrap, and electroplating wastewaters and sludges, and typically contain high concentrations of cyanide. If not recycled properly, however, these wastes could contaminate air, surface water, groundwater, and soil. Precious-metal-bearing hazardous wastes are subject only to manifest requirements under Federal rules to make sure they are sent to legitimate recyclers.

7. Mining Waste Recycling. The commenter requests that wastes associated with mining, beneficiation and processing of copper, gold, silver, molybdenum and selenium continue to be exempt from RCRA Subtitle C regulations. These wastes are currently excluded under Section 3001(b)(3)(A)(ii) of RCRA.

8. Steel Electric Arc Furnace (EAF) Dust Recycling. These emission control dusts, from steel production, are sent to a smelter for the recovery of zinc, and sometimes lead and cadmium. EAF dust is a listed hazardous waste and is frequently stored in the open piles before transport and smelting. Hazardous constituents present can be leached through soil to ground and surface water or be blown into the air or be released to the air during smelting.

9. Kaolin Clay Disposal. Kaolin clay is a byproduct from solvent reclamation and is discarded. Commenters request that the material, which is now hazardous since it contains F003 or F006 listed waste, be exempt from the definition of solid waste. Commenters contend that the solvents that are reclaimed should be exempt under the AMC opinion and, therefore, the clay powder material that contains them should also be exempt. This powder does not exhibit any characteristics of hazardous waste, according to commenters.

10. Spent Potliner Recovery. These materials from the primary production of aluminum are recycled for their fluoride values and their energy content. The potliners frequently contain high concentrations of cyanide and are sometimes stored in uncovered piles before recycling. They have been associated with contamination of air, groundwater, surface water and soil.

11. Hydrocarbon and Petroleum Refining Waste Recovery. Hydrocarbon materials and oil-bearing materials are reinserted into process streams at petroleum refineries. The wastes, which can be either listed hazardous wastes or exhibit a

characteristic of toxicity or ignitability, are sometimes stored and transported before being reinserted into a production process.

12. Non-Ferrous Metals Recycling. The commenter requests that the entire non-ferrous metal recycling system be exempt from RCRA regulation. Materials processed include copper converter flue dusts (lead rich), cadmium-bearing fume, and dore. These are listed hazardous wastes or exhibit a toxicity characteristic.

13. Secondary Lead Recovery. Secondary smelters request an exclusion from the definition of solid waste. The feed material, lead plates and groups from used lead-acid batteries, is sometimes stored in uncovered piles on the ground. Groundwater, surface water and soils could be contaminated with toxic or caustic liquids that drain from these piles.

14. Spent Acid Recovery. Regenerated acid for use in the steel making industry, sulfuric acid that could be used in fertilizer, and iron oxide for use in pigments, are all recovered from spent acids. These acids can be highly caustic and thus exhibit the hazardous characteristic of corrosivity.

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814

TESTIMONY OF ALEX R. CUNNINGHAM
CHIEF DEPUTY DIRECTOR
CALIFORNIA DEPARTMENT OF HEALTH SERVICES
PRESENTED TO
UNITED STATES SENATE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
HEARING ON RECYCLING
APRIL 14, 1988
WASHINGTON, D. C.

Good morning, I am Alex Cunningham, Chief Deputy Director of the California Department of Health Services in charge of the Toxic Substances Control Division. My division carries out the hazardous waste control program in California. It is one of the oldest and most stringent hazardous waste control programs in existence today.

Introduction:

In 1985, Governor Deukmejian signed into law a bill establishing an order of priority for dealing with hazardous waste. First, the generator should reduce the quantity of waste generated. Secondly, the generator should recycle as much waste as possible and, thirdly, discard only treated residuals. In setting these priorities, this legislation recognized the importance of recycling hazardous wastes. Recycled wastes are not disposed to land to become problems for future generations and the natural resources invested in the production of the original materials are reused over and over again before being discarded.

Because we are currently working towards authorization to run our hazardous waste program in lieu of EPA, California's approach to controlling the recycling of hazardous waste is quite similar to the federal program but has some important differences. In the instances where we differ, California's control is more stringent than that of the EPA but provides a degree of flexibility to fit the regulatory requirements to the hazard posed by the recycling operation. In my testimony today, I will examine and compare the regulatory approaches of California and the EPA and will examine some of the mutual problems encountered.

Comparison of EPA and California regulation of recycling:

Under federal law, recycling operations may be fully exempt from regulation, partially exempt from regulation, or fully regulated. Exemptions from regulation in federal law are contained in two places; first materials are exempted from classification as "solid waste" if they are recycled in certain manners: used as effective substitutes for commercial products, used or reused in an industrial process to make a product as long as the process is

not reclamation, etc. Secondly, the regulation section containing requirements for recyclable materials includes exemptions that are specific to materials such as industrial ethyl alcohol being reclaimed, spent batteries being regenerated, used oil not being burned, and certain petroleum wastes being reused in the refining process. This part of federal hazardous waste law also states that, while storage and transportation of recyclable materials are regulated, the recycling process itself is not regulated and thus does not require a permit.

Recycling of other hazardous wastes is partially exempt under federal law. These requirements are "relaxed" requirements when compared to the requirements for treatment of hazardous waste. Some of the wastes regulated in this way are hazardous wastes "used in a manner constituting disposal", hazardous waste burned for energy recovery, used oil being burned for energy recovery, hazardous waste used for precious metals reclamation, and spent lead-acid storage batteries being reclaimed.

Recycling of all other federally regulated hazardous wastes is regulated to the extent that the generator, transporter, and facility regulations apply. However, the recycling process itself doesn't require a permit as would other treatment processes which often closely resemble the recycling process.

In many ways California State hazardous waste control law is similar to federal law in its treatment of recycling; however, there are important differences which make California more stringent. California's waste classification system identifies many more wastes as hazardous wastes than does the federal waste classification system.

California's exemptions from regulation for recycled hazardous wastes are found in statute. These exemptions parallel those of the EPA in that they exempt wastes based on the recycling activity (the manner in which the wastes are reused.) A major exception to this parallelism is the clear and unambiguous California exemption for hazardous wastes recycled and used on the site where the waste was generated. This exemption does not apply when the hazardous wastes are regulated under federal law. It encourages on-site recycling of wastes (mostly solvent wastes) and thereby avoids transportation to off-site facilities with the enhanced probability of highway accidents and transfer releases. Many California firms have taken advantage of this exemption saving considerable money, resources and environmental problems. We're quite proud of this provision.

California law also has provisions for partial regulation when recycling certain specific hazardous wastes. Spent lead-acid storage batteries, waste elemental mercury, agricultural use of hazardous waste, and recycling of used oil, while unregulated or

less stringently regulated under federal law, are all regulated by California under specific reduced requirements. Recycling of all other hazardous wastes is "fully regulated", which brings us to the major difference between California law and federal law in the area of hazardous waste recycling.

California differs from the federal government in that any off-site recycling process must be permitted by the State as would any other hazardous waste treatment process. Our State law further allows for application of six different permit instruments to recycling operations. The "heavyweight" permit is the full RCRA-equivalent hazardous waste facility permit modeled after the RCRA hazardous waste treatment or incineration permit. This permit is required of off-site facilities burning hazardous waste for energy recovery. We then have a series of three decreasingly burdensome "Resource Recovery" permits: our series A, practically RCRA equivalent, Series B, somewhat less restrictive, and our Series C, a permit for an end user of recyclable material. Of these three resource recovery permits, only the series A resource recovery permit addresses federally regulated hazardous wastes in a federally equivalent manner. The series B and C resource recovery permits place requirements on facilities not regulated by EPA. In addition to these four permits, we can issue conditional variances to non-federally regulated facilities to recycle hazardous waste without a permit. These variances include conditions which address any specific hazard associated with the recycling operation. The last permit instrument available, at least for some facilities, is the grant of interim status which allows us some control over the hazards posed by the recycling operation but ensures that the facility will be in operation even though the permit process has not been completed.

To recap the comparison of California and federal regulation of recycling, the major differences lie in the larger universe of regulated wastes and the permitting of recycling activities in California counterbalanced by our greater permitting flexibility. We feel that we have greater control of the hazards of recycling thus ensuring a greater degree of protection of the health and safety of our citizens. However, we still have sufficient flexibility to make permitting of recycling work.

<u>Comparison of EPA and California regulation of burning hazardous waste for energy recovery</u>

Recycling means the use, reuse or reclamation of a waste material. Because many materials are similar in chemical composition to materials used as fuels, burning wastes for energy recovery qualifies as recycling. We are recovering the resources invested in these materials and burning them in place of virgin

fuels; thus the classification of burning for energy recovery as recycling is philosophically correct.

Federal law regulates burning of hazardous waste fuels under relaxed requirements. A hazardous waste facility permit is required for extended storage prior to the recycling operation, but no permit is required for the actual burning operation. In contrast, a permit would be required for a hazardous waste incinerator. The relaxed regulations for burning for energy recovery require only notification of the intent to burn hazardous waste fuels and recordkeeping. They lack the environmentally protective technical standards of the EPA incinerator regulations. Specific holes in these regulations include the lack of monitoring and analysis requirements for incoming fuels and the lack of limitations on the types of hazardous waste fuels burned. Also lacking are monitoring requirements for combustion conditions and stack emissions of toxic air pollutants and products of incomplete combustion. Another major hole in the EPA system is the lack of destruction and removal efficiency requirements (DRE's) and the lack of trial burn requirements to establish DRE's and enforceable operating conditions.

In contrast, California Law plugs all the above holes by requiring persons burning hazardous waste for energy recovery to obtain a Resource Recovery Facility Permit or an equivalent permit. The requirements for these permits parallel the requirements for an incineration permit. The permit specifies the types of waste that can be burned, the required analyses, the DRE of the unit, the operating conditions and the monitoring requirements for the facility. Combustion conditions, waste feed, and emission of criteria pollutants must be continuously monitored. The operating requirements and the destruction and emission characteristics of the unit are determined by trial burns conducted with extensive monitoring and analytical instrumentation. These trial burns are conducted under the auspices of the California Department of Health Services in concert with representatives from the California Air Resources Board, the State Water Quality Control Board, the EPA, and interested local agencies. During the trial burn, difficult-to-incinerate organics are often used as surrogates for the more easily burned hazardous components that are expected to be handled by the facility. Establishing acceptable DRE's for these hard-to-burn surrogates ensures that the hazardous components of proposed hazardous waste fuels will be acceptably burned. Expected emission rates from normal operations are fed into emission models; the results of the emission modeling are in turn fed into a risk assessment. The trial burn then confirms that the incinerator can meet or improve on the expected emission rates.

California's experience with the Systech cement kiln:

The California Department of Health Services has issued a hazardous waste Facility Permit to Systech Corp. to burn hazardous waste fuel in a remote cement kiln. This kiln derives 25% of its energy needs from the burning of hazardous waste fuel including liquids and sludges. More than twenty thousand tons of ignitable hazardous waste per year are burned in this kiln. This figure represents a significant portion of the organic wastes generated in California that cannot be economically be reclaimed.

The kiln was permitted as part of a 1984 demonstration project funded by an EPA grant. The project included extensive participation by the California Air Resources Control Board and other state and local agencies during two trial burns. These burns tested the kiln while burning difficult-to-burn organic compounds similar to those to be used as fuel. Interestingly, the pollutants emitted by the cement kiln actually decreased while burning hazardous waste fuel when compared to the kiln's normal powdered coal and petroleum coke fuels. After issuance of the permit, Systech was sufficiently confident of the future of this type of hazardous waste recycling that they invested considerable sums of money in state-of-the-art storage, blending, and analytical facilities. Currently, Systech rarely has free capacity for burning additional wastes. In fact, we could use several additional permitted cement kilns in California.

Concerns:

Because of the limitations of source reduction programs, incineration as well as other treatment technologies is vital to the success of the California and federal land disposal restriction programs. Six hundred thousand tons of incinerable hazardous waste are generated each year in California. We lack in-state incineration capacity for much of this waste. Our solvent recyclers depend on out-of-state facilities such as injection wells, destruction incinerators, and energy recovery boilers and industrial furnaces for disposal of their still bottoms and those low-value solvents which cannot be economically reclaimed.

Requiring permits for off-site recycling of ignitable hazardous waste by burning for energy recovery is necessary for protection of health and the environment. However, the sudden imposition of an EPA hazardous waste facility permit would shut down much of the present incineration capacity in the United States. This would greatly reduce the remaining capacity and cause it to become even more expensive; thereby potentially preventing the implementation of the Congressionally mandated land disposal restrictions. If a permit requirement is placed on the recycling process itself or for burning with energy recovery, we suggest a

phased approach with grants of interim status. The EPA could then request submission of permit applications for new and different types of permits in an order that reflects the hazard posed by the various recycling operations. Otherwise we stand to seriously disrupt the availability of needed alternatives to land disposal.

The federal government could benefit from California's experience creating a series of Resource Recovery Facility Permits. This classification of permit would recognize the fundamental difference and desirability of recycling over treatment and disposal. By creating a series of increasingly restrictive permits, the degree of regulatory burden placed on a facility could be matched to the degree of hazard posed by the operations at the facility. Only by creating such a flexible permitting system can the federal government assure that recyclers would not be forced out of business by the current burdensome one-size-fits-all permit.

A federal permit requirement for off-site burners of hazardous waste should include the current incinerator requirements. Emission rates should be estimated, emission modeling studies done, and risk assessments carried out on the results of these studies. Then, trial burns should be conducted to confirm the recycling unit's performance as an incinerator and its achievement of forecast emission rates and DRE's. The results of all this work would be factored into limitations on waste burned and monitoring requirements for each facility.

Conclusions:

California's experience with permitting of recyclers has shown that a flexible permitting program will preserve recycling capacity while providing protection to health and the environment. Current federal rules governing burning of hazardous wastes for energy recovery are clearly deficient; however, any permit requirement placed on recyclers must be carefully designed and phased-in to preserve this desirable alternative to land disposal of hazardous wastes.
Changes to the federal system for regulating recycling of hazardous wastes must balance the need for control of potentially dangerous processes and the needs of the rest of the hazardous waste control program to preserve an appropriate recycling option for hazardous wastes. Imposition of permitting burdens on the recycling process should be accompanied by increased flexibility in the permitting process to match the regulatory burden with the hazard posed by each operation.

Thank-you very much for inviting the State of California to testify at these hearings; we would be happy to provide you with any other assistance we can on this issue.

Waste Management, Inc.
Government Affairs Department
1155 Connecticut Avenue, N.W. Suite 800
Washington, D.C. 20036

May 26, 1988

The Honorable Max Baucus, Chairman
Subcommittee on Hazardous Wastes &
Toxic Substances
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510-6175

Dear Senator Baucus:

Waste Management, Inc. and its subsidiary Chemical Waste Management, Inc. appreciate the opportunity to participate in the recent hearing held by your subcommittee concerning "sham recycling."

Enclosed please find WMI's response for the record to questions posed, for Dr. George Vander Velde, by your letter dated May 6, 1988.

Should you or your staff have any questions, please contact me.

Sincerely,

Kevin J. Igli
Regulatory Affairs Manager
Waste Management, Inc.

Enclosure

WMI/CWM Responses to Follow-up Questions
for Dr. George Vander Velde
From April 14, 1988 Hearing on "Sham Recycling"

Q.1. It is clear from your statement that your industry does not favor interim status for boilers and furnaces. If the Congress were to authorize interim status despite your objections, what kinds of conditions and qualifications would you recommend?

As we discuss below in response to question number eight, the granting of interim status would be a very bad policy decision because it is unnecessary, and because it would inordinately delay the time when these devices are required to meet all requirements deemed necessary for protection of human health and the environment.

In the event that interim status is authorized, however, WMI would recommend that such facilities be required to comply with at least the following conditions.

1. All boilers and industrial furnaces (BIFs) granted interim status should be required to file a RCRA Part A application in accordance with 40 C.F.R. Part 270 Subpart G to ensure proper entry into EPA's permitting system, and comply with all the substantive requirements for interim status under 40 C.F.R. Part 265. In part, this includes: 1) financial requirements; 2) contingency planning; 3) tank and container

inspections and management standards, 4) manifest system, recordkeeping, and reporting; and 5) waste analysis requirements to ensure that BIFs understand the chemistry of the materials they are burning.

2. The amounts and types of hazardous wastes received by BIFs should be restricted to only those wastes managed prior to the granting of interim status -- no expansion. There is no need for allowing BIFs to start receiving and burning hazardous wastes not previously handled without first obtaining a full Part B permit. First, this expansion would encourage BIF facilities to begin managing materials that they know very little about which undoubtedly could result in an environmental accident. Second, given EPA's track record of loose enforcement against BIFs, we see no reason for Congress to allow further unmonitored burning of hazardous wastes. Third, we see no practical need -- no shortage of fuel or raw materials -- that could ever justify any sacrifice of public health protection. In short, the burning of hazardous wastes should only take place under strictly controlled operations by trained personnel, and the emissions should be known and quantified.

3. Interim status should not be granted to any BIFs that were not actually burning hazardous wastes prior the effective date of EPA's final regulations governing the operation of such facilities unless: 1) such facility was "in existence" in

accordance with the provisions for qualifying for interim status under 40 C.F.R. section 270.70; 2) a trial burn has been conducted; and 3) all monitoring and air pollution control equipment required by EPA for hazardous waste incinerators has been installed. This will prevent facilities from engaging in the practice of burning hazardous wastes without first demonstrating they can do so in an environmentally safe manner.

4. All BIFs receiving interim status must be required to demonstrate prior compliance with EPA's "sham" recycling policy. The EPA should not be in the business of rewarding lawbreakers. Requiring BIFs to prove that they have complied with this policy is absolutely necessary in order to determine who is a legitimate burner and who is not. See RCRA Enforcement Guidance: Burning Low Energy Hazardous Wastes Ostensibly for Energy Recovery Purpose, 48 Fed. Reg. 11,157 (March 16, 1983).

5. All waste product treatment residuals (e.g., ash, slag, scrubber water, etc.) generated from burning listed hazardous wastes in BIFs must be required to be managed as a hazardous waste under Subtitle C of RCRA. EPA's "derived-from" rule, 40 C.F.R. § 262.2(c), mandates that residuals generated from the burning of such wastes also be managed as a listed hazardous waste.

This means that BIF residuals must be tested to demonstrate

compliance with applicable BDAT treatment standards pursuant to 40 C.F.R. Part 268, prior to being land disposed in a hazardous waste landfill. Moreover, such residuals must be delisted through the rulemaking process prior to being disposed in a subtitle D facility. 40 C.F.R. § 260.22.

In addition, EPA recently proposed a requirement that "Hazardous Waste Derived Products Used in a Manner Constituting Disposal Meet BDAT [treatment standards] in Order to Remain Exempt from Regulation." 53 Fed. Reg. 17,578 at 17,605 (May 17, 1988) (emphasis added). By contrast, current EPA regulations exempt these Hazardous Waste Derived Products from federal regulation as long as the hazardous constituents of the waste have "undergone a chemical reaction in the course of producing the product so as to become inseparable by physical means." See 40 C.F.R. § 266.20(b).

Therefore, WMI supports EPA's proposed approach to require Hazardous Waste Derived Products to meet BDAT treatment standards under 40 C.F.R. Part 268 Subpart D for each prohibited hazardous waste that they contain.

This approach will help guard against "sham-recycling" facilities which may currently dispose of such materials on the ground without first performing tests which demonstrate compliance with BDAT requirements.

We are not suggesting that legitimate intermediate products, i.e., cement clinker, should be subject to residuals management under subtitle C of RCRA. Cement clinker is a real product subject to legitimate quality control standards. By contrast, residuals such as smelter slag, kiln dust, scrubber water, and certain lightweight aggregate (chemically equivalent to incinerator ash) are clearly "derived-from" hazardous wastes deserving full RCRA subtitle C controls. To do less will allow these materials to be directed to disparate waste management further exacerbating our Nation's environmental problems.

6. There should be a loss of interim status (LOIS) provision tied to completion of the following tasks within 6 months of the effective date of EPA's final regulations for BIFs:

a. contractual commitment to have a third party conduct a trial burn;

b. contractual commitment to install all monitoring and air pollution control equipment required by EPA for hazardous waste incinerators.

c. Part A and Financial Responsibility

d. Certification that all residuals are being managed

per subtitle C of RCRA

7. There should be a requirement for EPA to conduct a full RCRA compliance inspection of any BIFs granted interim status prior to the start-up of hazardous waste burning operations. Moreover, EPA should repeat this inspection once every six months until such time that BIF facilities receive a Part B permit.

Q.2. There seems to be quite a variety of types and sizes of boilers and industrial furnaces. Are some more or less suitable than others for hazardous waste destruction?

The simple answer is yes. In addition to a wide variety of burning devices, the fuel type being burned also is important. For example, a cement kiln burning high Btu liquids is a good combination; however, these devices are not designed well for burning solids. By contrast, a lightweight aggregate kiln outfitted with proper monitoring and control devices -- e.g., afterburner, particulate controls, automatic shutoff devices for upset conditions, etc. -- could provide excellent treatment conditions for solids.

Unfortunately, few if any BIFs have the above-mentioned redundant controls needed to operate safely by, for example, shutting down the hazardous wastefeed when upsets occur.

Certainly non-industrial boilers -- e.g., apartment complexes -- should not be allowed to burn hazardous wastes. Clearly the owners and operators of such devices lack sufficient training in the management of hazardous wastes, not to mention the poor locations of such facilities.

Q.3. It is clear from your statement that you draw a distinction between burning liquids and burning solids in some of these devices. Why is that?

WMI supports the activity of burning high-energy -- >5000 Btu -- liquids in boilers and industrial furnaces so long as compliance is achieved with EPA's "sham" recycling policy; however, we question the current practices of these facilities with respect to residuals management. WMI attaches for the record its comments on EPA's proposal to regulate BIFs (52 Fed. Reg. 16,982 (May 6,1988)). See attachment number 1.

With respect to the burning of solid hazardous wastes in BIFs we believe this activity constitutes incineration. There are few companies engaged in this practice which are not fully regulated as hazardous waste incinerators. These "exemption enterprises" generally claim to be recycling hazardous waste into a usable product. We think not. First, revenues from processing hazardous wastes at these facilities far exceed revenues earned

for the sale of product. Second, the so-called "product" is piled on the ground without first being evaluated through EPA's delisting process. This seems to constitute illegal disposal of hazardous waste treatment residuals.

In short, why should a hazardous waste incinerator be required to send its treated residuals to a subtitle C facility while, on the other hand, "exemption enterprises" are permitted to throw their treated residuals on the ground. Although the wastes are in both instances treated by a thermal destruction process -- there is only one environment. The same treated wastes are directed to disparate waste management.

WMI believes there is no technological basis supporting the burning of solid hazardous wastes in boilers and industrial furnaces. In general, BIFs are designed to burn liquid and solid fuels (e.g., pulverized coal, heavy fuel oils, etc), and have demonstrated their ability to burn liquid hazardous wastes. To burn solid hazardous wastes in these devices, however, would require major engineering modifications. We have not found any data that would refute our belief that introducing solid hazardous wastes into BIFs, as traditionally designed, would result in elevated air emissions of hydrocarbons and CO, and incompletely burned solid residues.

WMI believes these emissions and unburned hazardous residues

would result from the counter current flow design typical of most industrial furnaces. For example, in cement and aggregate kilns solid materials flow counter-current to the gas stream. Liquid hazardous wastes introduced into the burning zone of a kiln as a primary fuel source are exposed to both high temperatures and lengthy residence times. On the other hand, solid raw materials are introduced at the cool end of a kiln (typically maintained at temperatures ranging from 300-600 degrees Fahrenheit), and are heated as they progress towards the burning zone. This process works as long as solid hazardous wastes are not introduced with the raw product.

If solid hazardous waste and raw product were introduced at the cool end of a kiln, the result would be volatilization and incomplete combustion of organic constituents, and possibly the release of organic constituents into the atmosphere. This situation arises because most kilns are not properly outfitted (i.e., afterburner for volatile organics, and air pollution control equipment -- typical of hazardous waste incinerators) for burning organics that are volatilized from solid hazardous wastes.

Accordingly, we believe that when kilns are retrofitted with devices specifically designed for the purpose of destroying hazardous waste compounds, these units are no longer serving their initial purpose of producing a legitimate commercial

product. Rather, they are hazardous waste incinerators and must be regulated as such.

Q.4. What impact will the recent opinion of the District of Columbia Circuit Court of Appeals in American Mining Congress v. EPA (824F.2d 1177) have on "discarded material" sent to boilers and industrial furnaces? In your view, will this impact be different following promulgation of EPA's final regulations for these devices?

Under EPA's current interpretation, American Mining clearly will have virtually no effect on the status of discarded materials sent to boilers and industrial furnaces. The American Mining decision, as EPA interprets it, only limits EPA from exercising jurisdiction over closed-loop systems. A closed-loop is a system where secondary materials are returned for reclamation as feedstock to the primary process which generated them without first being reclaimed. Secondary materials reclaimed in total and then returned to the original process as feedstock are also excluded when the system is connected entirely by pipe.

The feature of a closed-loop system that exempts the process from regulation is that no element of discard exists. Waste does

not exit the system. Once waste does exit the production process and is treated, disposed, or otherwise managed either off-site or on-site, EPA jurisdiction is activated.

Consequently, because boilers and industrial furnaces will typically burn material that has been discarded (or removed from a closed loop), EPA retains jurisdiction to regulate the burning of the waste under the American Mining decision. (EPA has explicitly taken this position in the January 8, 1988 Federal Register, in which the Agency assesses the impact of the American Mining decision on its regulatory program.)

Since boilers and industrial furnaces will typically be burning hazardous wastes, EPA also retains jurisdiction over residuals generated from the treatment of such wastes. In other words, ash from a Subpart O incinerator is a hazardous waste through the derived-from rule and must be managed as such. Residuals generated by boilers and industrial furnaces engaged in materials recovery are also subject to the derived-from rule but the Agency has not yet forced BIFs to manage these residuals as hazardous wastes. Therefore, while the American Mining court held that EPA did not have jurisdiction to regulate a closed-loop program, EPA has refused to exercise its enforcement authority where it does have jurisdiction: residuals resulting from the treatment of hazardous waste by BIFs. The question is not whether American Mining limits EPA's jurisdiction over BIFs, but

rather whether EPA will exercise the authority it already has over them.

Q.5. Is the current problem with boilers and industrial furnaces an enforcement problem, or is there a need for legislative action to ensure proper regulatory control of these devices?

The answer is that both are needed. The Agency has been extremely lax in enforcing its "sham" recycling policy. Meanwhile, certain facilities have been operating under the guise of recycling when in fact they are "sham" recyclers. Simply enforcing against bad actors will not solve the problem at hand.

On May 6, 1987, EPA proposed a regulatory scheme for BIFs which suggests a policy of bending RCRA's basic health-protection mandate to accommodate anything remotely resembling recycling. See 52 Fed. Reg. 16,982. WMI believes that prompt legislative action coupled with swift enforcement action is the only resolution to EPA's misapplication of RCRA. Short of this, the "exemption enterprise" network will continue to grow and effectively short-circuit proper controls for the burning of hazardous wastes.

Below under question eight WMI offers a few suggestions in

respect to amending the RCRA statute.

Q.6. EPA's testimony asserts that its proposed regulations for boilers and industrial furnaces (see 52 Fed. Reg. 16,982 (May 6, 1987)), when promulgated, will be more stringent than current regulations for hazardous waste incinerators. Do you agree with EPA's assertion?

We strongly disagree with EPA's assertion and attach, for the record, a copy of our comments on EPA's above referenced proposal.

Q.7. The state of California currently requires facilities burning hazardous waste for energy recovery to obtain a "Resource Recovery Facility Permit" or an equivalent permit from it's Department of Health Services. This permitting system consists of a series of three decreasingly burdensome "Resource Recovery" permits which allow for enormous flexibility in permitting non-federally regulated facilities (i.e., cement kilns). Should the California permitting system be considered as a "model" for developing more stringent federal permitting controls for boilers and industrial furnaces burning hazardous wastes?

Unlike the federal regulatory scheme which distinguishes between incinerators on the one hand and boilers or industrial furnaces on the other, in California a distinction is made between incinerators and resource recovery facilities.

An incinerator is defined as "an enclosed device using controlled flame combustion, the primary purpose of which is to thermally breakdown hazardous waste." Title 22 Cal. Admin. Code § 66,110. Examples of incinerators provided in the regulatory definition are rotary kiln, fluidized bed and liquid incinerators. Id. There is no statutory or regulatory definition provided for boilers or industrial furnaces. "Resource recovery facility" means an "off-site hazardous waste facility whose principal method of hazardous waste management is the handling, recycling, treatment, use or reuse of recyclable material.[1]

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1 "Recycle" means to "use, reuse, or reclaim a hazardous waste or substance from a hazardous waste and includes the recovery of resources from a hazardous waste." Cal. Health and Safety Code § 25,121.

A "recyclable material" is a hazardous waste that is capable of being recycled and is one of the following:

"(a) A residue.

(b) A spent material * * *

(c) A material that is contaminated to such an extent that it can no longer be used for the purpose for which it was originally purchased or manufactured.

(d) Any material which, if it is to be recycled, is regulated by [EPA pursuant to the Resource Conservation and Recovery Act of 1976].

Title 22 Cal. Admin. Code § 66,181. Such a facility must also meet specified percentage limits on the amount of hazardous waste recycled as compared to the total hazardous waste managed. Id.

The operator of a resource recovery facility, with limited exceptions, must comply with all requirements which are generally applicable to an operator of a hazardous waste facility. Title 22 Cal. Admin. Code § 66,802. Thus, a resource recovery facility, must be permitted and is subjected to Financial Requirements(Article 17), General Facility Standards (Article 18), Preparedness and Prevention Requirements (Article 19), Contingency Plan and Emergency Procedures (Article 20), Recordkeeping and Reporting (Article 21), Environmental Monitoring (Article 22), and Closure and Post-Closure (Article 23). Title 22 Cal. Admin. Code, Chapter 30. Incinerators, as a hazardous waste facility, are subject to the above requirements and, in addition, to incinerator-specific requirements specified in Article 30. The latter, like the federal Subpart O standards, include requirements for trial burns, waste analysis, destruction and removal efficiency for designated constituents, particulate matter and HCL emission controls, and operating and monitoring. Title 22 Cal. Admin. Code §§ 67,451-67,457.

(e) Any retrograde material * * *"

Cal. Health and Safety Code § 25,120.5.

An operator of a resource recovery facility has the option of applying for a Resource Recovery Facility Permit in lieu of a hazardous waste facility permit. Title 22 Cal. Admin. Code § 66,802(a)(4). However, in the case of a boiler or industrial furnace burning hazardous waste the difference between the two permits may be in name only.

There are three different types of Resource Recovery Facility Permits -- Series "A", Series "B", and Series "C" -- and eligibility for any one permit depends on the nature of the hazardous waste recycled and the manner in which it is handled or managed. Title 22 Cal. Admin. Code §§ 66,806, 66,808, 66,810. Boilers and industrial furnaces burning hazardous waste fuels would potentially fall under a Series "A" Resource Recovery Facility Permit. A Series "A" facility is one that recycles one or more of the following:

(a) A material characterized or listed as hazardous under the Federal Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901, et. seq.

(b) A recyclable material which is an extremely hazardous waste.

(c) A recyclable material which is subject to land disposal restrictions.

Title 22 Cal. Admin. Code § 66,806(b). Alternatively, a Series "A" facility is one that handles or manages a recyclable material in a way that includes the following:

(a) The recyclable material is not ordinarily used as a

fuel and either is being burned for energy recovery, or is being used to produce a fuel.

(b) The recyclable material is a fuel that contains a hazardous waste and is being burned for energy recovery.

Id.

Applicants for a Series "A" Resource Recovery Facility Permit must submit the same permit application and operation plan as is required by an applicant seeking a hazardous waste facility permit. Id. In addition, the Series "A" application must submit evidence and written assurance that all the criteria for a Series "A" permit are met. Id. The Department of Health Services (DOHS) must act on an application for a Series "A" Resource Recovery Facility Permit in the same manner as for issuance of a hazardous waste facility permit, including the requirement of public notice and comment on a draft permit. Title 22 Cal. Admin. Code §§ 66,396, 66,806.

Although California's regulations clearly state that an operator of a resource recovery facility, with limited exceptions, "shall comply with all requirements of this chapter which are applicable to the operator of a hazardous waste facility," it is not clear whether or not the Article 30 incinerator requirements, which are within Chapter 30, are thereby requirements of a Series "A" Resource Recovery Facility Permit when the facility is burning hazardous waste fuels. Title 22 Cal. Admin. Code §§ 66,802 (emphasis added). That the

incinerator requirements should be triggered is particularly persuasive in the case of a resource recovery facility using a rotary kiln as rotary kilns are given as an example in the regulatory definition of incinerator. See Title 22 Cal. Admin. Code § 66,110. Furthermore, the definition of incinerator requires only controlled flame combustion for the thermal breakdown of hazardous wastes; destruction is not listed in the definition as a required purpose. Id.

Therefore, California permit writers may have some flexibility in applying incinerator standards to resource recovery facilities. On the one hand, Article 30 incinerator requirements would not be triggered unless the facility's primary purpose was the destruction of the hazardous waste. On the other hand, if hazardous waste is being thermally broken down in a facility using controlled flame combustion that facility is an incinerator regardless of whether its purpose is destruction, or energy or materials recovery. Thus it appears that the definition of incinerator may not be applied in all cases to boilers and industrial furnaces in California. Furthermore, the decision to apply all of Article 30 incinerator requirements to a resource recovery facility burning hazardous waste could be made on an ad hoc basis and may vary from region to region.

In summary, although California distinguishes between incinerators and resource recovery facilities, when a facility is

burning hazardous waste there may, in fact, be no permitting distinctions. Resource recovery facilities are, with limited exception, subject to the sare general facility requirements as any hazardous waste facility. When the resource recovery facility is one that burns hazardous waste fuels, DOHS has acted in the past to also impose the same facility-specific permit requirements as would be applied to an incinerator. It is unclear, however, whether DOHS will in all cases apply incinerator requirements to such facilities.

Q.8. In your testimony you state that "EPA should not be allowed to create interim status, with very few substantive requirements, for facilities now wishing to begin burning hazardous wastes". Rather, you suggest that EPA should require facilities to obtain a permit first. In your view, what is wrong with EPA's approach of creating interim status followed by a full Part B permit?

The Agency's proposed approach of "creating" a new brand of interim status for BIFs runs counter to the current status of its hazardous waste incinerator permitting program. New hazardous waste incinerators must go through the entire lengthy Part B permit process before commencing construction and operation. By contrast, EPA's approach for BIFs would revert to the almost

standardless era of 1980. Owners and operators of incinerators born into the original 1980 RCRA interim status system have been required to: 1) conduct trial burns; 2) install air pollution control and monitoring equipment; and 3) submit part B permit applications in order to continue operation of their facilities.

Therefore, EPA should not authorize interim status for BIFs. To do so would thwart the progress made by the Agency over the course of the last eight years in the area of hazardous waste incineration.

EPA's proposed regulations governing the burning of hazardous wastes in boilers and industrial furnaces include a phased approach for implementing a series of operational requirements important to the proper control of hazardous waste burning in such devices. WMI believes the Agency's approach sanctions excessive delays in achieving compliance with the proposed requirements. As we understand it the requirements would be phased in as follows:

	Requirement	Deadline	Elapsed Time
1.	General Facility Standards	Effective Date	1 year from now
2.	Metals, HCL & CO Limits	+ 12 mos.	2 years from now
3.	Trial Burn & Part B Submission	+ approx. 24 mos.	4 years from now
4.	Demonstration of DRE and Permit-	+ approx. 24 mos.	6 years from now

Specific Requirements

Our estimated time-frames for calling in Part B applications and for processing permits are based on EPA's experience to date with incinerators. We believe the universe of facilities seeking to become legitimate burners could be quite large, in which case, these estimates are extremely optimistic.

The overall delays suggested here amount to nearly ten years following the enactment of the 1984 Hazardous and Solid Waste Amendments (HSWA). Moreover, many interim status BIFs are likely to opt out of the RCRA system prior to facing Part B permitting requirements. Simply put, this would result in BIFs engaging in the practice of uncontrolled burning of hazardous wastes for a period of at least one-year, and avoiding RCRA section 3004(u) corrective action requirements.

WMI believes there is no environmental justification for delaying these requirements, and no need to incinerate hazardous wastes pending compliance.

As mentioned above WMI has enclosed a copy of its comments on EPA's proposal to regulate BIFs. See page nine, section I., entitled "Interim Status" for a detailed discussion of this issue.

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Q.9. Would the problems with BIFs be resolved if congress amended RCRA to say that if you handle a hazardous waste -- for whatever purpose, in whatever percentage, resulting in whatever product, residual or treated waste -- you have to get a permit and abide by all the same rules that apply to all other RCRA facility operations? What specific amendments would you recommend?

WMI believes that three amendments are needed. First, a clear statement of policy that anyone handling a hazardous waste as an input -- whether treater, recycler or producer -- must abide by the same regulatory requirements to ensure health and environmental protection. Second, a requirement to obtain a permit before burning hazardous waste, i.e., no interim status. Finally, the so-called Bevill amendment must be clarified to ensure that its exemption of residuals from subtitle C requirements does not apply when any amount of hazardous wastes are burned.

STATEMENT OF WENDY GORDON

ON BEHALF OF

THE NATURAL RESOURCES DEFENSE COUNCIL

BEFORE

THE SUBCOMMITTEE ON HAZARDOUS AND TOXIC SUBSTANCES

OF THE

SENATE COMMITTEE ON ENVIRONMENTAL AND PUBLIC WORKS

REGARDING

SHAM RECYCLING AND

RECYCLING EXEMPTIONS UNDER THE

RESOURCE CONSERVATION AND RECOVERY ACT

April 14, 1988

PRESENTED BY

JACQUELINE M. WARREN

This testimony is presented on behalf of the Natural Resources Defense Council, a national non-profit environmental organization working to reduce, and wherever possible, eliminate the threat to health and environment posed by hazardous substances. NRDC is very pleased to be able to testify today on the U.S. Environmental Protection Agency's handling of a critical aspect of the Resource Conservation and Recovery Act's (RCRA) cradle-to-grave hazardous waste management program -- the control of facilities burning hazardous waste for purposes of energy recovery.

Our message is a simple one. EPA continues to apply a double standard to burners of hazardous waste when one is no longer allowed by law. The 1984 Hazardous and Solid Waste Amendments to RCRA directed that EPA close the loophole through which facilities burning hazardous waste for energy recovery could avoid the rigorous controls imposed on incinerators burning to destroy hazardous waste.[1] The reasons for Congress' action were obvious by 1984, to all including EPA:

- o Failure to properly regulate recycling and recovery operations had led to direct threats to health and the environment;
- o The loophole was creating a disincentive to the development and expansion of properly designed and operated hazardous waste incinerators and treatment facilities.

To remedy the deficiency in the regulations, Congress directed EPA to regulate all combustion units burning hazardous

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1. Resource Conservation and Recovery Act of 1976, §3004(q), 42 U.S.C. 6924(q) (West Supp. 1987).

waste derived fuels for energy recovery "under the same ultimate standard that applies to other hazardous waste management facilities - regulations as may be necessary to protect human health and the environment."[2] To this end, Congress made it unequivocally clear in the goals section of RCRA, the legislative history and follow-up statements, that short-term and long-term threats to human health and the environment are to be minimized. Unfortunately, the regulatory program EPA has proposed will not close the loophole as Congress intended, but will instead perpetuate the regulatory imbalance which allows lower pollution control standards for recycling and recovery operations and inhibits the development and use of properly designed and operated incinerators and treatment facilities.

We certainly support and seek to encourage recycling. However, we strongly oppose a bifurcated scheme in which businesses burning hazardous waste for energy or materials recovery can operate similar facilities, apply similar technologies and processes, and accept the same waste as incinerators, but need only meet standards far less stringent than the RCRA incineration standards, which are designed to protect the environment. If such a double standard is allowed to continue, it is not inconceivable to imagine the entire hazardous waste industry becoming "recyclers" and thereby avoiding the stringent controls imposed on incinerators. HSWA directs EPA to prevent this from happening by treating equal health and

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2. S. Rep. No. 98-284, 98th Cong., 1st Sess. 38 (1983).

environmental hazards with equal regulations. EPA's regulations, however, do not and will not accomplish this goal.

The list of problems with EPA's program is long. Among the most serious shortcomings in EPA's unsuccessful effort to end the disparities in regulating burners of hazardous wastes are the following:

1) EPA has not set operating and emission control standards for facilities burning hazardous wastes for energy or material recovery that are equivalent to the technology-based standards imposed upon facilities burning for destruction.

Instead, the Agency has proposed standards for boilers and industrial furnaces that:

- o will allow HCL emissions 4-400 times higher than allowed from incinerators;
- o will not control particulate emissions at all. Respirable particulates are a complex mixture that contains a disproportionate amount of harmful substances associated with human disease, including respiratory illness, cardiovascular disease, neurological damage and cancer. Fine particulates are also a persistent and widespread threat to the environment;
- o will impose operating controls and monitoring requirements that are inadequate to achieve satisfactory levels of destruction and removal of organic compounds (referred to as destruction and removal efficiency (DRE)).

These lesser standards are troubling for several reasons. First, burning of hazardous waste is technically similar and results in similar emissions whether it occurs in an incinerator, boiler or industrial furnace. The threat to health and the environment therefore is less dependent on the type of facility than on the operating practices applied. Second, the control of toxic emissions is the same for all burner types. Thus, there is

no technical reason for accepting lower standards for certain burners when greater protection can be achieved and is required of others, namely incinerators. Third, there is nothing compelling boilers and furnaces to burn hazardous wastes. These facilities were built and placed in service to engage in other legitimate business enterprises. Fuels and raw materials are available to meet their needs. While energy and materials recovery are worthy purposes, they are not so important to the public good to justify needlessly and knowingly exposing human health and the environment to greater risk levels. Finally, the law requires not only that the same standard apply to all hazardous waste facilities, but also that the standards must minimize the threat to health and the environment.

2) EPA's use of risk assessment to establish toxic constituent concentration and emission limits undermines the principal goals of HSWA and misleads the public as to the risk to health and environment from exposure to toxic emissions from the combustion of hazardous waste in boilers and industrial furnaces.

NRDC takes great exception to EPA's proposal to use risk-based standards for HCL, lead, cadmium, chromium and arsenic emissions. First, the notion of an "acceptable" risk level is inconsistent with the overriding objective of RCRA to minimize the present and future threat to health and the environment. Moreover, there is no general consensus that a risk of $1x10^{-5}$, which would allow 2400 cancers in the U.S. population if everyone were exposed at EPA's proposed levels, is "acceptable." The danger of allowing EPA to declare various levels of cancer risk "acceptable" was clearly illustrated by the Agency's recent

pronouncement that a risk in the range of 10^{-3} (1 cancer per 180 persons) for exposure to benzene in air is acceptable. Once this slippery slope is attempted, the protection currently offered by technology-based standards will disappear at the whim of the incumbent Administrator. For purposes of comparison, the level deemed "acceptable" for exposure to benzene would allow 5,000 cancers per million persons exposed.

In addition, since fuels can be cleaned, combustion processes and facilities can be engineered and recovery systems installed to prevent releases, EPA's risk-based definition of "acceptable" releases completely short-circuits progress towards the far more protective endpoints. Finally, risk assessment is by all accounts merely an estimation technique and misapplied in a regulatory standard-setting process. As the Office of Science and Technology Policy has cautioned, the present methodologies of risk assessment contain a number of built-in uncertainties, and decision-makers should not rely too heavily on risk estimates derived from current state-of-the-art models and approaches.[3]

For all of these reasons, risk-based constituent concentration and emission limits should not be incorporated into RCRA. Instead, in keeping with the RCRA mandate of minimizing risk, the Agency should set technology-based standards applying the best available control technology, and should strive for ultimate elimination of toxic releases. We strongly concur with

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3. Office of Science and Technology Policy, Chemical Carcinogens: Review of the Science and its Associated Principles, 49 Fed. Reg. 21594, 21595-6 (May 22, 1984).

the views of one ex-Assistant Administrator of EPA who aptly noted that "[t]he people will understand and accept risk, not when government is acting to protect the activities leading to the risk, but rather when the government and the authority causing the risk are moving to eliminate or further reduce the risk."[4]

3) EPA proposes extensive and sweeping variances and exemptions, that cut deeply into the effectiveness of the regulations.

a) EPA offers the majority of boilers and industrial furnaces exemptions from a host of essential technical requirements for reasons that are either, if not both, scientifically unsound or a violation of the letter and spirit of the law.

These include:

i) a so-called "small quantity" exemption which exceeds by as much as 15 times the statutory exemption limit of 100 kg a month for hazardous waste generators[5] in setting "e minimis" quantity exemption limits for boilers and industrial furnaces. Intentionally designed by EPA "to avoid disturbances of a common waste recycling practice,"[6] this proposed exemption is a blatant violation of Congressional intent that "protection of human health and the environment [never] be subordinated to the continuation of used oil recycling activities;"[7]

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4. T. Jorling, "Risk Assessment: Dissent from a Former User," Governance, (Spring 1984), at 14-18.

5. RCRA §3001(d); 42 U.S.C. §6921(d).

6. 52 Fed. Reg. 17010 (May 6, 1987).

7. H.R. Rep. No. 98-1133, 98th Cong., 2nd Sess., at 114 (1984).

ii) an exemption for facilities burning so-called "low risk wastes," a classification which is legally unfounded and scientifically unsupportable. These "low risk wastes" include known carcinogens, such as benzene, vinyl chloride and methylene chloride. Further, there is evidence that the products of incomplete combustion (PICs) of EPA's "low risk wastes" are more toxic than the parent compounds and that production of PICs is enhanced in burners operated to optimize heat recovery rather than destruction;[8]

iii) an exemption from the trial burn requirement for boilers. This is particularly objectionable because, as EPA recognizes, boilers vary greatly in terms of size and therefore combustion efficiency, and are typically located and operated in such a way that emissions load and human exposure can be high. Moreover, the trial burn, required of all owners and operators of incinerators with few exceptions, is an essential means of demonstrating a facility's performance and providing data for setting operating limits that will assure compliance with required emission standards. Health and environmental protection being the goal, boilers are the least appropriate burner-type for hazardous waste destruction and should not be given any special waiver of testing and operating requirements.

b) EPA proposes to exempt residuals derived from hazardous waste co-fired with coal, if the coal provides at least 50 percent of the boiler's fuel values.

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8. See Comments of NRDC on EPA's Proposed Rule Regarding Burning of Hazardous Wastes in Boilers and Industrial Furnaces, July 16, 1987, pp. 29-32.

This exemption would grossly and unlawfully expand a limited exclusion from Subtitle C regulation for utility and mining wastes, including those that might be tainted with small proportions of municipal wastes. It also contradicts three of the Agency's own rules -- the "mixture" rule, which categorizes mixtures of solid waste and hazardous waste as hazardous and therefore subject to hazardous waste regulations; the "derived from" rule, which categorizes residuals derived from the combustion of hazardous waste as hazardous waste to be disposed in Subtitle C facilities; and requirements for waste characteristic testing. All of these rules have become central to the implementation of restrictions on residuals from incinerators and all other TSDFs regulated under Subtitle C. Moreover, the exemption applies a dilution policy long since repudiated by Congress and EPA as anathema to sound environmental policy. The bottom line is that this exemption is inequitable, failing the test of equivalency in environmental and public health protection established by Congress for incinerators, boilers and furnaces. NRDC favors an increase in thermal destruction capacity, but not at the expense of environmental protection.

c) EPA proposes to exempt residuals from industrial furnaces derived in part from the burning of hazardous waste if that hazardous waste was burned solely for energy recovery during the processing of an ore or mineral or during cement production.

Despite Congress' clear rejection of a "purpose test" in 1984, and the Agency's own awareness of the fact that the hazard

posed by the burning of a hazardous waste is not mitigated by the purpose of the burning, EPA has proposed to exempt residuals derived from burning hazardous waste in industrial furnaces, under certain circumstances. Since such residuals are no less toxic than those from a hazardous waste incinerator (all things being equal), they should be regulated under the same substantive requirements as currently apply to residuals derived from burning hazardous wastes in incinerators.

4) EPA's proposal would sanction excessive delays in achieving compliance with the requirements of this rule.

As much as 6 years could pass from the effective date of the pending burning and blending rule before boilers and furnaces burning hazardous waste will be required to submit Part B of their RCRA permit applications and carry out trial burns to demonstrate DRE. During this period, many hundreds of such facilities are likely to be operating and possibly expanding regardless of the quality and integrity of the units.

NRDC believes that such a lengthy delay is unjustifiable on environmental grounds. As mentioned above, these facilities currently operate without proper environmental safeguards and would continue to do so. The delay is also inequitable to firms seeking to expand their current incineration capacity or to bring a new incinerator on line in a tightly regulated environment and under close public scrutiny.

EPA's apparent quick-fix to the current treatment capacity shortfall may very well lead to a far more substantial capacity

crisis in the mid-1990's. At that point, the boilers and industrial furnaces that are expected to fill the current capacity shortfall are likely to opt out of the RCRA system rather than face permit requirements, trial burn costs and public scrutiny. Meanwhile, in the absence of increasing demand, incinerator capacity expansion plans are likely to be withdrawn. If that happens the temporary capacity gain will be offset by the considerable loss to health and the environment, and setbacks in the development of legitimate, carefully regulated hazardous waste management operations.

The overriding purpose of RCRA and the statutory standard for the EPA regulation is protection of human health and environment. There is no compelling reason to grant boilers and furnaces a temporary or permanent variance from this standard -- they do not need to burn hazardous waste. Such facilities should not be allowed to burn hazardous waste at all unless compliance with the health and environmental protection standard is demonstrated and a permit issued.

Conclusion

NRDC strongly believes that Congress, out of great concern with protection of health and the environment, sought to establish a single policy for all facilities handling hazardous waste: equal threats deserve equal regulation, regardless of any social benefit that a facility may be providing. This policy is incorporated in the clearly worded section of HSWA on burning and blending of hazardous wastes; it dissolves all distinctions

between burning for destruction or recovery purposes that bear on health and environmental protection. Thus, for all burners of hazardous waste, one standard should apply when establishing emission controls and when making permitting and residuals management decisions. The goal in HSWA is to minimize risk. Therefore, the standard should be the lowest level achievable applying the best technology.

NRDC vigorously opposes any attempt to extend or resurrect the unprotective double standard of the past.

HAZARDOUS WASTE TREATMENT COUNCIL

HWTC

1440 New York Avenue, N.W.
Suite 310
Washington, D.C. 20005
(202) 783-0870

TESTIMONY OF

RICHARD C. FORTUNA

EXECUTIVE DIRECTOR

HAZARDOUS WASTE TREATMENT COUNCIL

SHAM RECYCLING FACILITIES, AND RELATED ATTEMPTS TO EVADE RCRA VIA REDEFINITION AND RISK ASSESSMENT

BEFORE

THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

HAZARDOUS WASTE AND TOXIC SUBSTANCES SUBCOMMITTEE

UNITED STATES SENATE

April 14, 1988

I. IMPORTANCE OF THIS HEARING

Senator Baucus, Senator Durenberger, members of the Committee, I appreciate the opportunity to testify this morning and commend the Committee for convening a hearing on what the Council believes is the most serious and immediate threat to public health and to the preventive controls of RCRA: sham "recycling" facilities, and related attempts by the Agency and others to risk assess and/or redefine wastes and facilities out of RCRA coverage. This is the ultimate loophole.

This Committee went to great lengths in 1984 to statutorily close many of the loopholes that were created by the Agency in the 1980 regulations for so-called "beneficial recycling" operations. In no area was this more abundantly clear than for facilities that burn hazardous wastes for a purported recycling purpose (i.e., materials recovery and/or energy recovery). In addition, the legislation stipulated that the Agency must regulate recycling practices in a manner to protect public health and the environment, just as it does any other form of hazardous waste treatment, storage and disposal. Not only has this message been lost on the Agency, but moreover, growing segments of the regulated community seek to exploit and expand upon Agency inaction.

Apparently the message has gotten out that if you do not like the land disposal bans, or you do not want to retrofit your impoundment, or you do not want to conduct corrective action, then go to EPA and see if you can redefine your hazardous waste so as to exempt it from RCRA control. The focus of my testimony this morning is the growing trend by various burners of hazardous waste, in particular the Marine Shale Processors facility in Louisiana, that are seeking to redefine and/or risk assess themselves out of RCRA by claiming that: their wastes are "products", they are entitled to site-specific variances from national minimum standards, or that their wastes are "special", not "hazardous". We believe that the Committee will face no more serious an issue than the one before it this morning, for if facilities can simply exempt themselves, and unless the Agency is constrained from engaging in these definitional dalliances, the efforts of this Committee over the past five years to establish a preventive and protective system will fall victim to a semantic and assumption-laden shell game.

II. BACKGROUND ON THE COUNCIL; STATEMENT OF INTEREST

The Treatment Council is a national association of firms committed to the primary use of high-technology treatment and to the restricted use of land disposal in the management of hazardous waste. The Council is the largest organization

representing commercial hazardous treatment, management firms and equipment manufacturers. The Council's member companies are engaged in the treatment and management of hazardous wastes through the use of reclamation, solidification, fixation, neutralization, chemical and biological destruction and treatment; thermal destruction through the use of incineration, cement kilns and other industrial furnaces, wet oxidation and pyrolysis; and, the appropriate use of land disposal subject to necessary restrictions and pretreatment.

Council membership also includes firms that supply fuels to industrial furnaces and that burn hazardous wastes in such devices. The Council advocates national performance standards rather than the use of a specific technology(s). We supported the development of several key provisions in the 1984 RCRA Amendments, particularly the provisions that imposed incineration standards on all facilities that burn hazardous waste [RCRA 3004(q)(r)(s)].

In addition to these legislative activities, the Council has actively participated and commented on the Agency's development of the Hazardous Waste Fuel Specifications Standard (50 Fed. Reg. 49164, Nov. 29, 1985) to establish constituent specifications and criteria for identifying hazardous waste fuels and used oil fuels (Phase I standards). We have also challenged in court various deficiencies in the Phase I standards, and actively opposed the efforts of those who have sought exemptions from these rules for burning practices that involve energy and/or materials recovery. (See 50 Fed. Reg. at 49171, discussion of Cadence Chemical exclusion request).

In fact, one of the Council's most fundamental concerns since its formation in February 1982 has been closing the regulatory loophole for facilities that burn wastes for energy recovery and/or materials recovery. Irrespective of the stated purpose of the burning practice (destruction, energy recovery or materials recovery), all facilities that burn hazardous waste must comply with the same rules which in turn ensure equal protection of public health and the environment.

The Hazardous Waste Treatment Council was the original proponent and played a central role in the development of the burning and blending provisions of HR 2867 as contained in Section 204 of the Hazardous and Solid Waste Amendments of 1984 (HSWA). These provisions are now codified in RCRA Section 3004(q), (r), and (s), as amended by HSWA. In fact, when these provisions were being developed in 1982 and 1983, the Council was the sole industry advocate for these provisions.

III. BACKGROUND ON RCRA'S WASTE BURNING AND RECYCLING CONTROLS

Prior to HSWA, only sham recycling facilities were subject to incinerator standards (discussed below). Otherwise, EPA simply exempted the burning of hazardous wastes for energy recovery in boilers and furnaces from RCRA requirements. HSWA's burning and blending provisions represent the clearest and most detailed expression of Congressional concern regarding uncontrolled waste recycling and reuse practices. The legislative history is replete with bipartisan references to the glaring nature of EPA's "loophole" and the significant impact of this gap in regulatory coverage both on public health and with respect to those facilities that were expending resources to comply with existing treatment standards for incineration contained in Part 264 Subpart O. To ensure proper and timely cover, the Agency was provided with two years to promulgate the necessary standards while the notification and labeling requirements were imposed in a self-implementing manner. In addition, these provisions were specifically identified to take effect in both authorized and nonauthorized states on the date that they are finalized to ensure the promptest possible compliance with these standards.

Indeed, the Agency itself concluded over five years ago that in boilers and furnaces the burning of hazardous waste is indistinguishable for incineration and ". . . could pose a parallel or great risk in environmental dispersal of hazardous waste constituents and products of incomplete combustion". To prevent unregulated burning by de facto incinerators, the Agency promulgated its "sham burning" enforcement policy that required any facility burning large volumes of low btu waste to be regulated as an incinerator. 48 Fed. Reg. 14481-2 (April 4, 1983). See also House and Energy Commerce Committee report 98-198 to accompany HR 2367, p. 39. The Agency's most recent proposed rulemakings in this area verify the tremendous variability in sizes and types of wastes burned, types of facilities, and controls employed by boilers and furnaces. 52 Fed. Reg. 16986.

In addition to the Agency's own findings, public and Congressional recognition of the significance and magnitude of this regulatory loophole is not a recent event. A 1982 report by Fred C. Hart Associates concluded that many boilers are not likely to achieve the 99.99% DRE that applies to hazardous waste incinerators, and recommended a national program establishing minimum regulatory standards for burning of hazardous waste in boilers. That study also concluded that "for specific types and sizes of boilers and/or hard to burn wastes, burning in a boiler is likely to increase emissions of pollutants and thereby pose a greater risk to human health and the environment." "Impacts of

Burning of Hazardous Waste in Boilers", prepared by Fred C. Hart Associates, Inc., New York, NY August 30, 1982, reprinted in, Hazardous Waste Control and Enforcement Act of 1983, Hearings Before the Subcommittee on Commerce, Transportation, and Tourism of the House Committee on Energy and Commerce, 98th Cong., 1st Sess. 164-226 (1983). This study and others were the focal point of early hearings by the House and Senate on the vast number of loopholes in the RCRA regulatory system, and set the stage for the development and expansion of the burning and blending provisions of HSWA. See Hearings on the Hazardous Waste Control and Enforcement Act of 1983, supra.

To prompt the implementation of these key provisions, the Council has engaged in several pieces of litigation to establish a consistent, protective and meaningful scope of coverage for all recycling practices, particularly those involving the otherwise uncontrolled burning of hazardous waste:

- In March, 1985 we intervened on EPA's behalf to defend the Agency's claim of regulatory jurisdiction over the burning of hazardous waste in industrial boilers and furnaces;

- In September, 1987 we filed a citizens suit against St. Mary's peerless cement after EPA unlawfully granted interim status to this metropolitan cement kiln in total contravention of RCRA 3004(q). This provision of HSWA prohibits the burning of hazardous waste in large metropolitan cement kilns until such time as a final or Part B final permit is obtained. The Agency has totally disregarded this provision in granting interim status to this facility;

- In March, 1988 we filed notice of intent to file a formal citizens suit complaint against the Marine Shale Processors facility in Morgan City, Louisiana for illegally burning hazardous waste, for failing to meet the incinerator standards, and for failing to properly control and manage the residuals from the burning process.

IV. PERSPECTIVE ON RECYCLING: DISTINGUISHING PRODUCTION FROM WASTE MANAGEMENT ACTIVITIES WHEN WASTE REUSE IS INVOLVED

RCRA is a hazardous waste management law. Distinguishing production activities from waste management process is for the most part fairly straight forward. However, when the reuse of a hazardous waste (i.e., "recycling") is involved in producing a "product", the distinction between unregulated production and regulated waste management becomes critical.

"Recycling" is perhaps the most loaded and double edged term in the RCRA lexicon. To most it connotes a beneficial and highly desirable outcome -- the regeneration of spent solvents, the picking up of glass and aluminum and regenerating new products. However, from a regulatory perspective "recycling" is an umbrella term referring to any use, reuse, or reclamation (i.e., regeneration) of a waste. Recycling is not one activity, but several. Thus, recycling also refers more generally to activities such as: burning to recover energy or materials, applying materials to the ground as "fertilizes" or fill material, or storing the material prior to intended recycling.

Many recycling and reuse activities have elements of "discarding" in them. Placing wastes on the back forty for forty years with the "intent" to recycle them is no different than open dumping. Burning a waste without meeting incinerator standards is a purported reuse, but in fact it may be little more than shifting wastes into the air unless regulated like an incinerator. Placing wastes on the ground as "fill material" must ensure that the material does not leach toxic constituents in the process. And lastly, any process involving reclamation must not use land-based units such as lagoons, which themselves would release constituents to the groundwater, even if an actual product is being regenerated in the process.

While many recycling practices have a generally beneficial outcome, we have learned the hard way from the Superfund program that we do not encourage proper management by exempting recycling/reuse from regulation. A process needs to be regulated not only to ensure a proper end result, but also that the process of producing or reclaiming a product is done in an environmentally protective manner. The outcome of many waste treatment and management processes is beneficial. Proper incineration results in virtually complete destruction of toxic constituents. Proper metal stabilization results in permanent prevention of the release of toxic metals. However, unless there is ongoing verification of the treatment practice, we have little certainty that waste management or reuse activity does not merely shift waste constituents from one environmental medium to the another.

In addressing and analyzing the assemblage of issues and definitional problems there are three major considerations.

1. Distinguishing True Production Practices From Waste Management Activities - Closed Loop Processing

While most waste reuse/recycle activities must be defined as hazardous waste management and regulated accordingly, certain waste reuse activities may legitimately be classified as "production". For example, wastes that are directly reinserting into a production practice by a "closed loop" using connected piping to increase production yields without the use of intermediate lagoons or waste treatment systems should probably not be classified as hazardous waste management, even if the material being reinserted exhibits a characteristic or is a listed waste.

2. Applying Regulatory Standards to Hazardous Waste Recycling Practices

For all other reuses of wastes, that are not integrally and directly related to a production practice that generated the waste, regulatory standards must be imposed and permits required just as they are for incineration, chemical fixation, or storage. One of the major problems at the present time is that while the Agency has exerted statutory jurisdiction over a wide range of waste reuse and recycle practices, many of these areas lack performance or regulatory standards (i.e., burning of hazardous waste in non-incinerator units, applying wastes to the ground, or storing for extended period of time).

3. Enforcement Against Sham "Recycling" Facilities That Claim To Produce A Product

No matter how many laws are passed or regulations put into place, there will always be certain facilities (i.e., Marine Shale Processors) that seek to exempt themselves from RCRA by claiming they produce a product, rather than manage a waste; facilities that are nothing more than incinerators in disguise. While several of the definitional problems require additional legislation and regulatory standards, there will always be those seeking to take advantage at every turn. These are facilities that claim they are engaged in a production practice when in fact they are quite clearly and simply hazardous waste management facilities. Unless swift and decisive action is brought by the Agency to enforce against these shams, they undoubtedly will proliferate.

The history of the Superfund program clearly illustrates that we do not encourage proper management by exempting recycling from regulation. Fully twenty percent of our Superfund sites

involve facilities or units that were purportedly engaged in recycling. The harms visited on the environment from these sites were the result of bogus operators that never attempted to recycle, as well as sloppy management in the recycling process that failed to control the release of toxic constituents. The potential to cause harm from mismanagement is not eliminated by simply slapping a label of "recycling" or "treatment" on a given practice. Nor is the harm eliminated simply because their process has a purportedly protective outcome. Standards must be put into place to ensure that the public health and the environment is protected both during and after the treatment process is completed.

V. ATTEMPTS TO REDEFINE AND RISK ASSESS WASTES AND FACILITIES OUT OF RCRA JURISDICTION

In light of the numerous more stringent amendments to RCRA enacted in 1984 such as the land disposal bans, surface impoundment retrofitting, minimum technology requirements for landfills, and RCRA corrective action as a condition of permitting, many generators and TSD facilities are seeking ways to not only evade these requirements, but rather to escape the RCRA system altogether. To date, three basic escape routes surfaced under the general description of "redefining" and "risk assessing" ones way out of RCRA:

- Recycling wastes into "products";
- Site-specific variances to allow for less stringent standards; and,
- Expanding the category of "special" wastes and thereby place a waste into regulatory limbo.

In addition, the testimony discusses several other emerging efforts in this vein: attempts by generators to exempt "on-site" activities from regulation, other creative EPA proposals to exempt hazardous wastes from RCRA by adjusting the "hazardousness" of a waste in accordance with the types of units they are contained in rather than the intrinsic properties of the waste, and the general laxity of generator requirements as it pertains to testing and notification.

8

A. Recycling Wastes Into "Products" -- Burning Applications

1. Marine Shale Processors -- The Ultimate Sham

a. Violation of EPA's Sham, Burning Policy and Other Standards

The Marine Shale Processors ("MSP") is a large industrial furnace located in Morgan City, Louisiana, that claims to produce road base aggregate. MSP burned over 100,000 tons of hazardous waste at its plant last year including spent solvents, waste pesticides, DDT, dioxin-containing wastes such as pentachlorophenol, and creosote. The wastes are stored in open and leaking barges in the bayou next the facility. This volume exceeds that burned at any commercial incinerator facility. They have exempted themselves from all RCRA's incineration standards because they claim to be an "aggregate producer" not a "waste manager". As such, the facility has never conducted a complete RCRA trial burn to ensure proper destruction efficiency; never sought the required Agency determination as to whether its ash is non-hazardous; does not test its ash for compliance with the land disposal ban limits for organic solvents; and, has indiscriminately placed its ash residue (i.e., the purported aggregate "product") at numerous locations throughout the state and the southeastern United States.

Normal aggregate producers use natural resources found in abundance, such as clay to produce pebble-like road based aggregate. However, Marine Shale must rely on DDT, creosote pentachlorophenol, spent solvents, and other hazardous wastes to produce aggregate through its "innovative" process.

While the basis for Marine Shale's "product producer" exemption is outlandish at best, the customers for this precious aggregate product are all but impossible to find as well. In fact the obtainable customer records show that this precious "product" has been sold primarily, if not exclusively, to a firm that uses the same mailing address as Marine Shale. (See Attachment A).

In short, the largest commercial incinerator of hazardous waste in the country is an exempt aggregate kiln in Morgan City, Louisiana. If a facility that burns virtually 100% hazardous waste as its feed material, that derives virtually 100% of its revenue from the burning of hazardous waste, that adjusts its price for btu content of the waste, that sells its "aggregate" to an internal customer, that relies on DDT and creosote as the raw materials for the production of pebbles is not a sham, then what

is? If this facility is exempt, then there is no such thing as violating RCRA. If the largest commercial burner of hazardous waste in the country can exempt itself from national incineration standards by simply claiming that its ash is "road base aggregate" then the hazardous waste regulations are not worth the paper they are printed on, and the public is in for one big surprise. This facility is a sham from every conceivable perspective.

MSP is but one example, and perhaps the least sophisticated, of facilities that are seeking to exempt themselves from RCRA hazardous waste regulations and enforcement by claiming that they are not waste managers at all, but rather product producers. With regard to burning of hazardous waste for other purposes, EPA has on three separate occasions stated in its enforcement policies, regulations and further clarifications that burning hazardous waste for destruction (i.e., burning large volumes of low btu material) is regulated as incineration irrespective of the stated purpose of such burning. These Federal Register notices were issued on March 16, 1983; January 5, 1985; and January 8, 1988, respectively. Attachment B summarizes all the pertinent RCRA regulations and violations, including MSP's qualification as a sham facility according to all the criteria EPA has established to identify sham burning facilities, which were most recently reiterated on January 8, 1988.

Because Marine Shale uses listed hazardous wastes as the "feedstock" into its rotary kiln, all of the residue from the kiln is automatically a hazardous waste under EPA and DEQ regulations. See 40 C.F.R. § 261.3(c)(2); LHWMR § 2.1. Calling the residue an "aggregate" does not alter this basic fact.

Marine Shale strenuously claims that its "aggregate" is environmentally benign and therefore should not be treated as a hazardous waste. The short answer to this claim is that Marine Shale has been and still is free to petition EPA and/or DEQ to "delist" the residue from its rotary kiln. This is exactly the approach that EPA recently took in connection with the residue from an on-site mobile incinerator used to treat dioxin-contaminated wastes. But unless and until Marine Shale persuades the regulatory agencies through the procedures prescribed by law, the "aggregate" is a hazardous waste and must be managed as such. Thus, Marine Shale's stockpiling of the "aggregate" at its plant is a separate and ongoing violation of RCRA, as is each transfer or sale of the material for use as fill dirt or construction filler.

By every objective and verifiable measure this facility is a sham. It is the type of sham that has, does and will exist unless the Agency takes swift and appropriate enforcement action.

While we have heard brave words for over two years, their inactions tell a different story. Two years of investigation without a decision is sending a perverse signal. In fact, the Agency is considering incorporating some of these perversities and deficiencies of the MSP operation into the regulations governing the burning of hazardous waste in any industrial furnace or boiler (e.g., exempting the ash from the burning of hazardous waste in industrial boilers and furnaces, and establishing less stringent performance standards for these facilities generally). This renegade facility is a symbol of a Headquarters enforcement program gone to seed, an Agency program gone astray and a Justice Department effort in dangerous disaray. This Committee must agressively oversee EPA's enforcement program to ensure that the Agency and the Justice Department do not continue to give comfort to facilities that so blatantly flaunt the law and Congressional intent.

b. Shifting Of Wastes To Water and Air

MSP is a model facility in one respect, however. It is a model for illustrating why national minimum standards are necessary for all waste management facilities, particularly those that burn hazardous waste. Such standards are needed not only to ensure that the end product and/or result of a treatment process is safe, but also to ensure that the actual treatment process permanently protects public health, rather than merely shifts waste constituents from one environmental medium to the next. A review of recent operating records and MSP inspection reports revealed how an unregulated facility can simply shift waste constituents to the air and water rather than destroy them. See Attachment C, a February 10, 1988, Louisiana Department of Environmental Quality, Office of Water Resources Inspection Report). The following is a series of excerpts from that report:

> ". . . there are leaks below the water line of the barge that are allowing the escape of contaminated water and represents a continuous source of water pollution to bayou boeuf. We requested a removal of this barge in 1986, but MSP has refused to comply with this request. The permanent placement and filling of this barge on the edge of Bayou Boeuf also constitutes illegal filling of a wet land by MSP."
>
> "Of particular concern is the fact that MSP has no wastewater treatment system for its process/related wastes."
>
> "Another major concern is the potential for

both chronic and sudden discharges from the barges used to store waste at the facility. These are simply accidents waiting to happen. MSP has made some cosmetic improvements in its facility over the last two years, but few of the water pollution control improvements requested by the state have been done."

"Many of the problems and violations that were documented at the facility two years ago still exist today. Others have been corrected but the priorities and schedules have been determined by MSP."

"I do not believe that this Agency can continue to allow what this functionally hazardous waste incinerator to operate without an appropriate permit that will provide adequate control of water pollution from the facility, nor can we wait until the facility has solved all its problems to issue such a permit."

Turning the air emissions from the facility a recent report by one of MSP's consulting firms indicated that the facility could not achieve the required 99.99% or four nines destruction and removal efficiency (DRE) for some very basic and important constituents: toluene, the easiest material to burn according EPA's incinerability index; methylene chloride, the only chlorinated compound tested; or benzene. In the case of benzene, the test revealed that MSP could only achieve at DRE of 59%. (See attachment D).

Finally, turning to the question of Marine Shale's ash or "aggregate", Attachment E contains excerpts from the analytical report on MSP from their own consulting laboratory. Of the 47 weeks from which test data was available and of the 60 ash samples contained in the report, 30 of those failed to achieve delisting limits on the basis of metal content alone. To be able to delist such volumes of treatment residue, a facility must demonstrate that its residue will not reach toxic metals at a rate greater than 6 times the national drinking water standards for toxic metals such as arsenic, lead, cadmium, chromium, and selenium. 50 Fed. Reg. 48886 (Nov. 27, 1985). Attachment E identifies all the weeks in which MSP was unable to meet the delisting limits for metal constituents. In many cases metals fail to meet delisting levels by over a factor of 10. This analysis does not even to begin to examine the organic content of the ash.

2. The New Jersey Zink Company

MSP is far from the only facility to seek this "producer" exemption. The New Jersey Zinc Company in Palmerton, Pennsylvania is a metal smelting operation that claims it is exempt from RCRA because it recovers a "product". The facility is one of the top Superfund sites in the country that consist of approximately 33 million tons of residues from the zink smelting operation that has been conducted there for the past 70 years. The facility accepts a wide range of hazardous wastes, but nevertheless has continued to claim it is exempt from RCRA coverage because it is a product producer. The State of Pennsylvania has recently challenged this interpretation in the first action of its kind. Pennsylvania is claiming that New Jersey Zink is every bit as much a hazardous waste TSD facility as any other commercial facility, and that the residues produced from its smelting operation are subject to control as a hazardous waste.

B. Recycling Wastes Into Products -- Land Applications

1. Old Bridge Chemical, Inc.

This facility (also known as CPS/Madison Industries) is ranked as the tenth most hazardous site in the United States on the Superfund NPL, and is the number one Superfund site in New Jersey. Since 1967 this company has repeatedly dumped and discharged chemicals into the public sewer system, as well as onto its own property. The State estimates that 400 tons of hazardous wastes have been dumped including organic chemicals, such as benzene, carbon tetrachloride, and methylene chloride. The surface and groundwaters are contaminated from these materials, as well as from the other metal-bearing waste that this facility continues to accept today claiming that it recycles copper-bearing wastes into cupperic chloride used as a insecticide. Despite the gross hazards and environmental violations that have occurred at this facility over the years, it has and continues to exempt itself from RCRA regulations on the basis that it is a product producer, not a hazardous waste facility. A more telling example of the product/recycling ruse would be difficult to find.

2. Waste As "Fertilizers"

It is a common and current practice in the fertilizer industry to use metal-bearing hazardous wastes as ingredients in the production of fertilizers. While some of the metals produced as a by-product of manufacturing are beneficial metal-nutrients in the soil (i.e., copper, zink), many others such as cadmium,

chromium, lead, and mercury have no nutritional value whatsoever. Many different sources of metal bearing wastes (i.e., steel and smelting plant bag house dusts, waste from platting operations) are directly incorporated into fertilizers despite the fact that they contain up to 5-13 percent lead in some instances, and significant concentrations of other toxic metals. While EPA in January of 1985 recognized the need to regulate this area, no policies or regulations have been forthcoming. In effect, we have more control over metal-bearing wastes that are placed into a landfill than those that are placed onto a corn field. Some large fertilizer manufacturers even have storage permits for RCRA wastes they accept for incorporation into the fertilizers, but ironically have no controls or permit standards for the removal of toxic metals before wastes are incorporated into the fertilizers.

C. Site-Specific Variances

Another rapidly emerging detour around the hazardous waste regulatory system invented by EPA is the incorporation of site-specific variances based on individual risk assessments when deciding whether to list a waste as hazardous, or making a determination that the waste is non-hazardous (i.e., delisted).

This is not only contrary to the statute, but it also violates long-standing Agency policy to the contrary, as well as common sense. If a waste varies in terms of its legal "hazardousness" based solely upon locational factors, then we do not know from one site to the next whether or not that waste is subject to control. EPA in essence would afford different levels of protection for different segments of the country based upon a generator's or facility's determination of why his waste is different or less hazardous. Site-specific factors include things such as: population density, groundwater hydrology, potential future land uses, groundwater quality, attenuative factors of the soil, and other such fate and transport criteria. Stated another way, this policy says that a waste which is hazardous in one location could be deemed non-hazardous when placed in another simply because of low population density, the fact that the groundwater in the area is already highly contaminated, or because the generator believes the soil will prevent many of the constituents from migrating. People in areas of high contamination or people in areas of low population density would be afforded less protection. There is no provision in the statute for this approach, yet EPA is repeatedly attempting to make use of this approach to grant delisting determinations to firms that simply do not want to treat hazardous waste to the nationally applicable delisting standards.

D. Special Waste Exemptions

In 1980, Congress created a category known as "special" wastes. These were wastes that were deemed to be in regulatory "limbo" because, while they appeared to be hazardous, Congress wanted a closer study of these materials before they were specifically listed as hazardous waste under RCRA subtitle C. Special waste now consists of wastes from the processing and extraction of ores and minerals, fossil fuel combustion wastes, waste from the extraction of petroleum, and others. As luck might have it, not one of these "special" wastes has ever been transferred to Subtitle C jurisdiction.

In fact, the Agency has actively expanded the categories of "special" waste beyond that ever envisioned by the statute. For example, the Agency has determined that the Bevill Amendment, which established the special waste category for mining wastes, also applies to any residue from the burning of any hazardous waste in such a furnace. In Baltimore, lagoons that contain highly acidic waste from the production of titanium dioxide paint pigment have been deemed to be exempt from RCRA regulation because they are "waste from the processing of ores and minerals". In essence the Bevill Amendment has been expanded so broadly as to exempt any metal-bearing waste produced by an industrial process, whether it is at the mine site or at the manufacturing operation. The States of Maryland and Georgia have stated that EPA's interpretation of the Bevill Amendment could exempt up to 70% of all hazardous waste generated in their state.

The special waste issue is also at the heart of the municipal solid waste ash question, and is the envisioned regulatory repository for a wide range of other wastes generated by American industry including "industrial wastewaters" and infectious wastes. Unless the special waste category is eliminated, we are on the verge of having a system where no wastes are hazardous because they are all so "special".

E. Exemptions for On-Site Recycling

In a recent court case entitled the American Mining Congress v. EPA (AMC v. EPA), both the mining and petroleum industries have asserted that under current law EPA has no jurisdiction over any recycling activity done on-site, where recycling is defined to mean anything that is not "discarded". These two industry groups go on to claim that "discarding" only occurs when wastes are placed into a RCRA land disposal unit such as a landfill. All other waste management activities are claimed to be outside the scope of EPA's jurisdiction.

The claim that EPA has no jurisdiction over any on-site activity that does not involve actual placement into a landfill cell is not only ludicrous, but if sustained would vitiate the RCRA system as we know it. These groups have been emboldened by the decision in this case, which the industry is reading to support their position. However, as an intervenor in EPA's behalf, we believe the fair reading of the case is that the Court only intended that certain types of closed-loop recycling practices be exempt and considered manufacturing processes. Nevertheless, unless the Congress clarifies this important area and explicitly establishes the Agency's jurisdiction in this area, it will no doubt be a source of on-going if not intermable litigation. Old notions die hard. The exemption that the Agency created in 1980 for "beneficial" recycling is one that has rooted itself in the psyche and approach of both regulator and regulatee alike. A legislative statement on this issue is imperative to once and for all clarify that EPA's jurisdiction over recycling practices is limited only where a waste generation process is directly and continuously connected to a manufacturing process. Unless this is done, these fatuous but confounding challenges will persist.

F. Other Creative EPA Programs

The Agency is engaged in a wide range of other "creative" approaches to identifying if not redefining or risk assessing wastes out of the system. The Agency is becoming more concerned with over regulation then making sure that scams and loopholes such as these are closed. We are rapidly departing from the notion of RCRA as a national minimum standard statute.

1. Organic Toxicity Characteristic (OTC) -- Surface Impoundment Variation

The 1984 RCRA Amendments required EPA to promulgate a new characteristic of hazardous wastes to account for the leachability of organic constituents. The current toxicity characteristic only accounts for the leachability potential of metals in a waste. Four years after enactment, the Agency still has not finalized this organic toxicity characteristic. Moreover, it is my understanding that the Agency is planning to propose a separate variation on the organic toxicity characteristic for wastewater lagoons that would allow higher concentrations of wastes to be placed into unlined "wastewater" lagoons without being classified as "hazardous" under RCRA. Essentially this approach would allow the volume of a lagoon to dilute the "hazardousness" of the waste.

2. Non-Decisions On HSWA Wastes

RCRA 3001(e) requires EPA to make a determination whether or not to list a wide range of hazardous waste for which listing decisions are long overdue. These wastes include carbamate pesticides, organobromines, dyes and pigments, paint production wastes, and inorganic chemical industry wastes. The Agency has no budget or no intention to even make a determination as to whether or not these wastes are hazardous.

3. Carcinogens, Mutigens and Teratagens

Section 3001(b)(1) requires that the Administrator in cooperation with the CDC also list or identify those hazardous wastes subject to Subtitle C solely because of the presence in such wastes of certain constituents such as carcinogens, mutigens and teratagens at levels in excess of levels which endanger human health. The Agency has no plans to implement this provision. Rather than making the listing determinations required by the law and developing the new characteristics as specified, the Agency is investing its resources in a whole series of risk assessment and redefinitional efforts to take wastes out of the system.

4. Stigma

Rather than investing its resources in the statutorily mandated requirements, it is now standard Agency practice to conduct a "stigma" analysis prior to making any listing decision. This is patently unlawful if not inane. Stigma is a self-fulfilling prophecy which if followed would lead us back to the days of a pre-RCRA system. The Agency used this rationale in failing to list used oil as a hazardous waste, a decision which we expect to be overturned in the very near future.

5. Acutely Hazardous Waste and Discarded Commercial Chemical Products

Only in the bizarre world of RCRA do you have the following situation exist. EPA maintains two separate lists of hazardous waste that consist of commercial chemical products that are hazardous when discarded. One of the list is for acutely toxic commercial chemical products the other for non-acutely hazardous products (i.e., the "p" and "u" lists). However, the only wastes covered by these two very lengthy lists are chemical substances manufactured for commercial or manufacturing use, and which consist of commercially pure grades of the chemical in which the listed chemical is the sole active ingredient. Therefore, only when a waste pesticide is discarded as a product formulation where it is the sole active ingredient, is it a RCRA hazardous waste. Mixtures of commercial formulation with two or more

pesticides are not a hazardous waste. Sludges or residues from the use of these products are not hazardous wastes, nor are the wastewaters from their production hazardous waste. While the Agency has stated its intention to redress this "sole active ingredient" deficiency for both the regular and acutely hazardous commercial chemical products list, nothing the Agency has yet to issue a final rule after stating its intention to do so over two years ago.

G. Generator Requirements

There is a vast disparity in the requirements for RCRA TSDFs and those of waste generating facilities. In fact, under the current regulations are not required to test their wastes to know whether or not the waste passes or flunks the land disposal ban limits. Rather, generators are allowed to use "general knowledge" to make such quantitative determinations. In addition generators are not required to certify or notify that they are using one of the exemptions from RCRA (i.e., closed-loop reuse). Currently, generators or TSDFs may claim that they are exempt from RCRA if they are engaged in "close loop" recycling, if they are using their waste as directly as a product, or if they are using as a feed stock in a production process. There is currently no means of verifying whether a generator has properly exempted himself on the basis of "general knowledge".

VI. RECOMMENDATIONS

A. Enforcement

There is simply no substitute for the Agency taking the appropriate enforcement action against such facilities as Marine Shale Processors, Inspiration Copper, and Old Bridge Chemical. The absence of Agency enforcement action is reenforcing the worse tendencies of generators and firms in this business. I would recommend that the Committee request from EPA a monthly RCRA enforcement report, covering both their enforcement actions to implement Agency policy on sham burning of hazardous wastes, and sham recycling facilities that involve placement of wastes on the ground.

B. Regulatory Recommendations

While many of these problems could benefit from additional regulatory clarity, the Agency must develop standards for the incorporation of wastes into fertilizers by setting maximum concentration levels for toxic metals that may be incorporated into fertilizers. Common sense approach would be to require that all toxic metals be removed to a non-hazardous level or least to the level of the land disposal bans. We should have no more

metal constituents or other toxic constituents being placed onto corn crops then we do into landfills.

With regard to facilities that burn hazardous waste, the Agency is long overdue in promulgating final standards to ensure that industrial boilers and furnaces that burn hazardous waste comply with incinerator standards and ash management requirements. We must ensure a level playing field, not codify old prejudices and loopholes.

C. Legislative

There are several legislative recommendations for the Committee. These included:

- Specifically amending RCRA to prohibit the Agency from using site-specific factors in the waste listing or delisting process.
- To prohibit the use of "stigma" as a basis for not listing a hazardous waste.
- The "special waste" category has far outlived its usefulness, and is serving as a means to continue to evading proper controls. Unless this category is eliminated it will become the haven for new exemption seekers.
- Clarify the definition of "solid waste" in the statute to make unmistakably clear that all waste recycling/reuse practices are fully subject to RCRA except for direct and continuous reinsertion into a manufacturing practice.
- Stipulate that any shipment of waste off-site or any management of a waste through a process on-site other than a closed-loop recycling is regulated as hazardous waste management.
- Amend the statute to require the Agency to provide the relevant committees of the Congress with a monthly report on enforcement actions on all functional enforcement categories particularly sham recycling.

MARINE SHALE PROCESSORS, INC.

REMIT TO: MARINE SHALE PROCESSURS
P. O. BOX L
PICAYUNE, MS 39466

INVOICE NO. 0002177
INVOICE DATE 86/10/30
PAGE 001
CUSTOMER NO. 071H104

INVOICE TO,
HUEY STOCKSTILL, INC.
P. O. BOX L

PICAYUNE MS 39466

RECEIVED; SHIP TO
STATE MANIFEST NUMBER

		DATE	
UPON REC'D	PICK-UP	86/10/30	M13637
YOUR ORDER NO.	SPECIAL INFORMATION		
			SPC-MURG

ITEM	DESCRIPTION	QUANTITY	PRICE	AMOUNT
P B FILL	PROCESSED FILL MATERIAL	99.280	2.000 /TON	198.56
			TOTAL MERCH.	198.56
		TAXABLE AMOUNT	198.56	
			STATE TAX	7.94
			COUNTY TAX	5.36
			CITY TAX	.60

FOR SERVICE 504 / 631-3626

CORRESPONDENCE ONLY
ADMINISTRATIVE OFFICER
P.O. BOX 1649 • SLIDELL, LA 70458

TOTAL AMOUNT 212.96

ATTACHMENT A

ATTACHMENT B

SUMMARY OF RCRA REGULATIONS AND ENFORCEMENT POLICIES
POLICIES GOVERNING SHAM RECYCLING/BURNING FACILITIES;
A COMPARISON WITH MSP'S OPERATIONS

I. INTRODUCTION

At the outset, it is important to emphasize that the Marine Shale case does not arise from a "loophole" in the EPA or DEQ hazardous waste regulations. On the contrary, the Marine Shale case is fundamentally an enforcement problem. Human experience confirms that there will always be a few bad actors who seek to evade the law unless and until they are prosecuted. But this reflects upon the motives of the scofflaw, not upon the soundness of the law itself. At no time since Marine Shale began burning hazardous wastes in 1985 has its facility been exempt from EPA or DEQ regulations.

II. MARINE SHALE LACKS INTERIM STATUS UNDER RCRA AND IS OPERATING IN VIOLATION OF FEDERAL LAW

By way of background, RCRA requires that all hazardous waste treatment, storage, and disposal facilities--including existing facilities--be permitted in order to continue operations. Recognizing that EPA and the states could not issue permits immediately for all existing facilities that handle hazardous wastes, Congress provided in section 3005(e) of RCRA for "interim status"--a type of "grandfathering" period during which existing facilities may operate pending final decisions on their RCRA permit applications. 42 U.S.C. § 6925(e).

Existing facilities may qualify for RCRA interim status under two different situations. First, all hazardous waste facilities that were in existence on November 19, 1980, the effective date of EPA's RCRA hazardous waste regulations, were eligible for interim status. Second, other hazardous waste facilities that were in existence on some later date when changes in the statute and/or the regulations first brought that facility into the RCRA regulatory system are also eligible for interim status.

Eligible facilities obtain interim status through a two-step process. First, they must notify EPA or the state that they are engaged in hazardous waste management activity; this must be done within 90 days after they become subject to RCRA. Second, they must the initial permit application ("Part A") of the EPA application or "Part I" of the DEQ application) within six months after they first become subject to regulation.

Marine Shale's claim that it qualified for interim status runs as follows. On January 1, 1986, new DEQ regulations took effect that incorporated EPA's revised definition of "solid waste" and expanded RCRA jurisdiction over recycling activities. Thereafter, Marine Shale filed the required notification forms and initial permit application forms with the federal and state agencies. Thus, according to Marine Shale, it obtained interim status in January of 1986.

This deceptively simple reasoning overlooks a critical fact. Marine Shale began handling listed hazardous wastes in 1985, at a time when the DEQ regulations already required a RCRA permit for storage of those wastes prior to recycling. Specifically, Marine Shale accepted many tons of K001 creosote wastes in 1985. Section 22.14 of the DEQ regulations--as amended in 1984--regulated the storage of these wastes prior to recycling.

Thus, Marine Shale clearly missed its one "window" for obtaining interim status. RCRA does not allow facilities to qualify for interim status by belatedly acknowledging that their activities are already subject to regulation. Because Marine Shale has no RCRA permit, and never qualified for interim status, its continuing receipt and handling of hazardous waste is a clear, ongoing violation of federal and state law. That fact alone would justify closing down the facility today.

To make matters worse, however, Marine Shale is also engaged in the unlawful incineration of hazardous waste. Although Marine Shale has never sought any type of regulatory approval to incinerate hazardous wastes, it has been engaged in this incineration activity for more than two years. The balance of this letter analyzes the legal status of Marine Shale's incineration activity.

III. BACKGROUND ON BURNING OF HAZARDOUS WASTES

When the RCRA hazardous waste program took effect in November of 1980, EPA's original regulations stated that certain wastes being beneficially reused or legitimately recycled were exempt during the reuse or recycle process itself. 40 C.F.R. § 261.6 (1980). Although this limited exemption was later rescinded in January of 1985, it provoked intense debate over whether particular practices were "beneficial" reuse or "legitimate" recycling, as opposed to sham activities.

The question arose frequently in the context of burning hazardous wastes. Companies that burned hazardous wastes claimed that they were doing so for energy recovery (i.e., a purported "beneficial recycling" practice), rather than to destroy the wastes, and thus sought to avoid RCRA regulation of their burning operations.

A. EPA 1983 Enforcement Guidance

In March of 1983, EPA published in the Federal Register an enforcement guidance document that squarely addressed the issue of when burning is legitimately a form of energy recovery and when it is simply a convenient method of destroying hazardous wastes. The enforcement guidance focused primarily on the energy value of the wastes being burned:

> The significance of a waste's energy value is evident: if the wastes being burned have only de minimis energy value, the burning cannot recover sufficient energy to characterize the practice as legitimate recycling. In other words, energy recovery is ancillary and the wastes, for practical purposes, are being burned to be destroyed.
>
> . . . .
>
> In determining which hazardous wastes have little or no heating value, EPA enforcement personnel should use as a benchmark wastes with a heating value less than low energy commercial fuels such as wood or low grade subbituminous coal. Examples of hazardous waste having little or no heating value are [various spent solvents] and such pesticides as toxaphene, chlordane, and heptachlor.
>
> 48 Fed. Reg. 11,158 (March 16, 1983).

Significantly, EPA's enforcement guidance also noted that when hazardous wastes are not being burned as part of legitimate recycling, they are being burned for the primary purpose of destruction. 48 Fed. Reg. at 11,158 n.2. Consequently, the device in which the wastes are burned is an "incinerator" subject to EPA's RCRA hazardous waste incineration regulations. Id.

B. The 1984 RCRA Amendments

Congress ratified this approach when it enacted the Hazardous and Solid Waste Amendments of 1984. Section 3004(q) of RCRA required EPA to set standards for all facilities that burn hazardous wastes, based on a congressional recognition that

cement kilns, lime kilns, and other industrial furnaces were increasingly being used to burn hazardous wastes under the guise of "legitimate recycling."

In addition, Congress expressly stated that many of these industrial furnaces were operating as hazardous waste incinerators and should therefore be regulated as such. The Senate report on the provision that later became section 3004(q) stated: "When a combustion unit, such as a cement kiln, operates like an incinerator (especially in terms of the type and volume of hazardous waste being burned), the Agency must apply the same substantive requirements that are applied to regulated incinerators." S. Rep. No. 98-284, 98th Cong., 1st Sess. 38 (1983).

C. EPA's 1985 Definition of Solid Waste

Since that time, EPA has revised its RCRA regulations to make it unmistakably clear that the storage of hazardous wastes prior to burning is fully regulated, and that the burning of hazardous waste for the purpose of destruction is deemed to be "incineration" and regulated as such.

In its January 4, 1985 revised definition of "solid waste," for example, EPA stated:

> We note as well that if an industrial furnace burning secondary materials for ostensible material recovery is used to destroy the materials, it is not recycling but rather is incinerating them. Examples of such sham recovery are when there is no material recovery, or where material recovery is economically insignificant.
>
> 50 Fed. Reg. 631 (Jan. 4, 1985).

At the same time, EPA revised its definition of "incinerator" to reflect "the general principle that boilers and industrial furnaces used to destroy wastes rather than to recover energy and material from them are considered to be incinerating the wastes, and thus are subject to [the RCRA incinerator standards]." Id.

D. EPA's January, 1988 Restatement of Sham Recycling Principles

Finally, EPA very recently reaffirmed these principles and restated the test that determines whether hazardous wastes are being burned for legitimate recycling or for destruction. In the Agency's words:

> When burning occurs in a boiler or industrial furnace for the dominant purpose of destruction, the activity is classified as incineration. Not only are these incinerated materials solid wastes, but the act of incineration is presently subject to regulation under the RCRA incinerator standards. Obvious factors bearing on whether burning is for the purpose of destruction, and so is presently subject to regulation as incineration are:
>
> - Whether the operator of the device is paid to burn wastes and the percentage of income derived from burning wastes as opposed to producing a product;
> - Whether the wastes are selected to meet specifications related to a recycling purpose or rather are simply solicited and accepted indiscriminately;
> - The energy value of the wastes (if burning is for energy recovery);
> - How much energy or material value each waste contributes to the recycling purpose;
> - Whether each waste burned is as effective for the claimed recycling purpose as the raw materials normally processed in the device; and,
> - Whether the toxic constituents in the waste contribute to the recycling objective or are simply being destroyed.. . . . Persons burning the waste have the burden of showing that each waste burned is for a legitimate recycling purpose and not for destruction.
>
> 53 Fed. Reg. 522 (Jan. 8, 1988) (emphasis supplied, citations omitted).

When these "obvious factors" are applied to Marine Shale, the result is crystal clear: Marine Shale is burning hazardous wastes in order to destroy them, and therefore must be regulated as an incinerator today.

IV. ANALYSIS OF MAIRNE SHALE'S OPERATIONS BASED ON EPA CRITERIA

A. Percentage Of Income Derived From Burning Wastes as Opposed To Producing a Product

The relevance of this factor is simply a matter of common sense: A good way to ascertain the purpose of an industrial operation is to examine which parts of the operation generate most of the income.

In Marine Shale's case, it is readily apparent that virtually all of the income is derived from charging customers to burn and destroy their hazardous wastes, as opposed to the sales of "aggregate." Professor Oliver Houck of Tulane Law School estimated in November of 1986 that Marine Shale takes in $12.8 million annually for burning hazardous wastes and only $100,000 annually from selling "aggregate." Even if the local market for Marine Shale's "aggregate" were to improve to the point where it could be sold for $6.00 per ton, instead of $2.00 per ton, Professor Houck concluded that Marine Shale would still derive 35 times as much revenue from burning hazardous wastes as it would from selling its "aggregate."

It should be noted that Professor Houck was working with data for 1986. Since that time Marine Shale's volume of hazardous wastes accepted for burning has increased, while its sales of "aggregate" have decreased--and virtually ceased entirely. Thus, the ratios estimated by Professor Houck are even more extreme now than they were in 1986. In fact, the dollar figures given by Marine Shale and quoted in the enclosed Washington Post news article suggest that 99% of Marine Shale's revenue comes from burning hazardous wastes.

B. Whether The Wastes Are Selected Based on a Recycling Purpose or Accepted Indiscriminately

Marine Shale holds itself out to the world as ready, willing, and able to burn virtually all hazardous wastes regulated under RCRA. This covers hundreds of different substances with a wide range of chemical and physical properties. These materials have little in common, except that all of them present a hazard to human health and the environment. In addition, because all of them are regulated under RCRA, customers are willing to pay handsomely for off-site disposal. A more "indiscriminate" operation is hard to imagine.

C. The Energy Value of the Wastes Being Burned

Many of the wastes burned by Marine Shale were specifically mentioned in EPA's 1983 enforcement guidance as having little or no energy value. Spent solvents and pesticides are among the hazardous wastes that fit this description.

In fact, Marine Shale admits that 80% to 95% of the wastes it burns are not being burned for energy recovery at all. Instead, these wastes are fed directly into the rotary kiln as "feedstock" to produce the "aggregate." With respect to this "feedstock," Marine Shale has informed EPA that "material with a fuel value in excess of 3,000 BTU's per pound is undesirable." By comparison, even wood used as fuel typically has a heating value ranging from 5,000 to 8,000 BTU's per pound. 48 Fed. Reg. 11,158 n.3.

A final point worth noting is that Marine Shale actively discourages its customers from shipping high-BTU wastes by charging higher prices as the energy value of the waste increases. This clearly refutes any claim of burning for energy recovery with respect to 80 to 95% of the wastes.

D. How Much Energy or Material Value Each Waste Contributes to the Recycling Purpose

The energy value of the wastes was covered in item 3 above. With respect to material value, Marine Shale admits that the primary materials it recovers to produce the "aggregate" are sand, gravel, and glass. We are unaware that spent solvents, waste pesticides, and many of the other industrial wastes that Marine Shale burns contain significant levels of sand, gravel, or glass. We are also unaware that Marine Shale evaluates waste streams on this basis prior to acceptance. Finally, we are unaware that Marine Shale ever analyzes its incoming wastes prior to burning to determine the levels of sand, gravel, or glass that they may contain.

E. Whether Each Waste is as Effective for the Claimed Recycling Purpose as the Raw Material Normally Processed in the Industrial Furnace

At the outset, it should be noted that Marine Shale's rotary kiln is actually a refurbished lime kiln, even though Marine Shale now claims to be operating an "aggregate kiln." In any event, according to EPA, the feedstocks normally used in aggregate kilns are "special clays, pumice, scoria, shale, or slate." 52 Fed. Reg. 16, 1987 (May 6, 1987). These materials are heated sufficiently to liberate carbon dioxide, causing the rock to expand or "bloat" and take on a sponge-like structure. This light-weight aggregate is then employed in the formulation of light-weight concrete for structural or other uses.

The "aggregate" produced by Marine Shale, however, bears little resemblance to light-weight aggregate. Indeed, it resembles fine-grained beach sand with small clumps that can readily be broken apart in the hand.

Putting aside these obvious disparities between Marine Shale's operation and conventional aggregate kilns, it is clear that the wastes burned by Marine Shale are far less effective in producing "aggregate" than the minerals typically used as feedstock in aggregate kilns. Simply stated, Marine Shale burns hazardous wastes that contain only a minute amount of sand, gravel, and glass; the vast bulk of the wastes are at best useless for producing "aggregate." By contrast, conventional aggregate kilns utilize minerals that actually become the finished light-weight aggregate in its entirety.

F. Whether the Toxic Constituents Contribute to the Claimed Recycling Objective or are Simply Destroyed

According to Marine Shale, all hydrocarbons are completely destroyed in the rotary kiln, contributing nothing to the "aggregate." It should come as no surprise that the toxic constituents in Marine Shale's wastes make no contribution to the claimed recycling objective. After all, Marine Shale purports to be in the business of recovering sand, gravel, and glass; these materials are not inherently toxic.

V. CONCLUSION: NATIONAL POLICY IMPLICATIONS

In short, every one of these six criteria confirms that Marine Shale is burning hazardous wastes for the purpose of destruction. The claim of "material recovery" is simply not borne out by the facts; Marine Shale is an incinerator masquerading as something else.

While the EPA has not set out quantative criteria for deciding when a facility is burning for the purpose of destruction, this is no reason to condone Marine Shale's flagrant abuse of the regulatory system. First of all, it is frankly difficult to imagine a better case in which to use EPA's criteria to pierce the claim of "legitimate recycling." As noted above, all of the Agency's factors point in the same direction: Marine Shale burns hazardous wastes for the purpose of destruction. The wastes contribute little or nothing to the "aggregate" that could not be obtained more readily from a local quarry; the toxic constituents of the wastes are destroyed, rather than recycled; and the entire economic basis of the operation is the fees charged for burning hazardous wastes.

Moreover, EPA and the states have much to gain through enforcement actions against sham recyclers. From a law enforcement perspective, regulations and criteria are of little value if companies that flout the law based on their own

"interpretations" are left alone. Moreover, when a sham recycler like Marine Shale flourishes, it breeds disrespect for the law and encourages others to set up similar operations.

This is not an idle or speculative concern. Facilities in several other states are already claiming to be exempt from the hazardous waste regulatory program on the ground that they allegedly recycle wastes into "products." For example, the Inspiration Consolidated Copper Company in Arizona takes in metal-bearing and organic wastes, allegedly for the purpose of copper recovery. The slag produced by the "smelter" is stored in vast unlined surface impoundments at the facility. Similarly, the New Jersey Zinc Company, another smelting operation, operates a facility that is one of the top Superfund sites in the country and contains some 33 million tons of zinc smelting residues, yet claims to be exempt from RCRA on the ground of producing a product. The Commonwealth of Pennsylvania recently initiated administrative enforcement action challenging New Jersey Zinc's claim of exemption.

In sum, the Marine Shale case is neither an isolated problem nor the result of a regulatory "loophole." It stems from a recurring failure of the enforcement system to call what is obviously a bluff. What has always puzzled me is why a company that purports to the best it too good to comply with the regulations and protective standards that the rest of the industry has actively supported. If they are so good, why are they so afraid to prove it? If this is not a sham, what is?

ATTACHMENT 6

Louisiana Department of Environmental Quality

RECEIVED MAR 2 5 1988

MARTHA A. MADDEN
SECRETARY

OFFICE OF WATER RESOURCES

J. DALE GIVENS
ASSISTANT SECRETARY

February 10, 1988

MEMORANDUM

To: J. Dale Givens
Assistant Secretary

From: Marion T. Fannaly
Permit Program Manager MTF

Re: Marine Shale Processors, Inc. (MSP)

On February 1, 1988, I inspected the above company's Amelia facility together with Messrs. Michael Schurtz, Dick Gregg, Kerry St. Pe' and Bruce Baird. We were accompanied at the facility by Mr. Charles Bennet, Plant Manager, and Ms. Ramona Singleton, consultant. The purpose of the inspection was to evaluate the company's water pollution control facilities and verify the information submitted in the permit application prior to issuance of a modified water discharge permit. The company has requested this modification to legitimize its current practice of processing/incineration of hazardous waste which is not allowed under the current permit.

The inspection disclosed several deficiencies and inaccuracies in the permit application, to wit:

1. Outfall 001 currently receives drainage from areas that are clearly subject to contamination by process activities. The application states that 001 contains only uncontaminated stormwater runoff and that all process associated waters are contained and directed back to the rotary kiln for oxidation.

2. Outfall 001 cannot be properly monitored as it is subject to inundation by the receiving water and the effluent would be subject to dilution at the sampling point.

3. Outfall 003 consists of non-contact cooling water from an air compressor that drains to a sump within the process area almost directly under the northwest end of the kiln. This sump drains to 001 as noted above. The application states that 003 drains to an uncontaminated stormwater sump.

4. There appears to be no method to monitor Outfall 004 prior to its commingling with 001 or to monitor 001 prior to dilution by 004.

5. The site schematics submitted with the application that purport to describe the discharge areas (Attachments III and VI) are contradictory and clearly erroneous. Substantial portions of the facility that are depicted as draining to either 001 or 002 actually drain to the ditch bordering the perimeter fence which ultimately flows back towards the highway. These areas include material storage areas, the scrap yard, product loading areas, and the parking lot for trucks used to haul hazardous materials.

6. The effluent data submitted for 001 and 002 are identical. MSP has provided EPA with supplementary data (including priority pollutant analyses) for these outfalls, but has not submitted this data to the state.

7. MSP's plan for preventing discharge of contaminated runoff calls for storage of excess wastewater in various process tanks. Their rationale assumes that these tanks are maintained at 50% capacity. All of the tanks observed during our inspection contained considerably more than that amount of waste. The area from which runoff will have to be contained has also been grossly underestimated. I do not believe that they presently have sufficient tankage to prevent discharge of excess water during an unusually heavy rain.

8. There is a continuous discharge from an overflow pipe in the raw water intake system to the barge slip that is not discussed in the application.

Numerous other problems were noted during the inspection. The most serious of these are as follows:

1. Four tanks have been installed at the northwest end of the facility between the kiln and barge slip. They were reportedly intended for storage of stormwater, but presently contain wastes intended for processing. One of these, a tank trailer used to store high-BTU wastes, has a minimal curb around it. The other three tanks have no secondary containment and are studded with unsecured valves. One of the tanks had a valved discharge pipe connected directly to a sump that drains to 001. Any discharge from these tanks would flow directly to the same sump and into the barge slip via 001. Some contamination was evident in the form of odor and production of a sheen on the water surface when sediment at the bottom of the sump was stirred. Samples were collected from this sump

for analysis of conventional and priority pollutants. Preliminary laboratory results indicate organic contamination of the wastewater that was being discharged.

2. The barge located in the slip at the northwest end of the site contained water in the rakes at both ends that appeared to be at the same level as the water in the slip. A crude measurement with a weight on a string confirmed this observation. This barge contains several tanks used to store various liquid wastes. A strong solvent odor was detected in the rakes which may indicate that the storage tanks are leaking into the outer hull. A sample was collected from one rake for analysis of volatile organic compounds to investigate this possibility. Preliminary results from the laboratory indicated extremely high levels of various priority pollutants in what should be uncontaminated water. If the outer hull has been breached, these wastes may be released into the slip. A boom has been placed across the open end of the slip, but it would be inadequate to contain a major spill, or indeed a minor spill if the material was denser than water or soluble. Attachment III and the 'Proposed Site Plan' show a combination sheet pile bulkhead and earthen dam across the mouth of the slip which does not exist. Mr. Bennet stated that no new material was being placed in the barge and that it would be removed when emptied. This same statement is found in the 'Addendum to Spill Prevention Control and Countermeasure Plan' dated April 29, 1987 with an additional statement that this would be accomplished within six months. That time has long passed and the barge still contains large quantities of material.

3. The SPCC plan referred to above is deficient in that it does not address the four tanks referred to in paragraph 1 of this section.

4. MSP has initiated construction (pile-driving) to renovate the second horizontal kiln at the site with the apparent intention of increasing its processing capacity. Although a meeting has reportedly been scheduled with the Air Quality Division to discuss this expansion, no information has been provided to this division, nor is the matter discussed in the application for a modified permit.

5. The 'coal tar barge' which has been filled with aggregate and serves as part of the loading dock at the site was filled with water to the same level as the outside water despite the presence and operation of a sump pump apparently designed to remove any internal water. An oily sheen was present on the surface of this water and a strong creosote odor was noticeable. The aggregate piled on top of the barge was observed to be eroding into the water and the metal lip that was added to the bayou side of the barge to provide containment of the material has rusted or broken at one corner. Wakes from passing boat traffic would easily wash over even the intact sections. Previous inspections have documented that this barge contains large amounts of coal tar and creosote residues beneath the aggregate. These inspections also noted the presence of apparent leaks below the waterline of the barge that allow escape of contaminated water

and represent a continuous source of water pollution to Bayou Boeuf. These leaks apparently still exist. We requested removal of this barge in 1986, but MSP has refused to comply with this request. The permanent placement and filling of this barge on the edge of Bayou Boeuf also constitutes illegal filling of a wetland by MSP.

6. Two additional barges containing what appeared to be creosote wastes were docked at the site. These barges are believed to have been there for several years and are being used for storage of these wastes until it may be convenient to process them. (The creosote pile on land has finally been removed. Processing of residual material was underway at the time of the inspection.)

As a result of the deficiencies in the permit application and the on-site pollution control facilities documented above, the present draft permit will have to be completely rewritten and major modifications made to the facility to ensure adequate protection of the environment. At least two additional outfalls will have to be added and there should also be some changes in the monitoring requirements.

Of particular concern is the fact that MSP has no wastewater treatment system for process-related wastes. Pollution control depends entirely upon containment and housekeeping measures which were found to be severely deficient during the inspection, particularly with regard to possible contamination of the 001 discharge. Due to the nature of MSP's operation (incineration and processing of hazardous waste) it is imperative that appropriate and adequate wastewater handling and/or treatment facilities be provided to handle any contaminated wastewater in excess of that which may be consumed by the incineration process. Another major concern is the potential for both chronic and sudden discharges from the barges used to store wastes at the facility. These are simply accidents waiting to happen. MSP has made many cosmetic improvements in its facility over the last two years, but few of the water pollution control improvements requested by the state have been done.

Marine Shale Processors, Inc. is and has been operating in violation of its current water discharge permit which does not authorize processing of hazardous wastes. We must either revise the permit to legitimize this activity or formally deny the permit and take legal action to close the facility. If the latter action is taken, the facility would probably be able to continue to operate during the appeals process in similar fashion to its current activities which have been virtually unregulated while the agency considered its permit modification request. Many of the problems and violations that were documented at the facility two years ago still exist today. Others have been corrected, but the priorities and schedules have been determined by MSP. I do not believe that this agency can continue to allow what is functionally a hazardous waste incinerator to operate without an appropriate permit that will provide adequate control of water pollution from the facility, nor can we wait until the facility has solved all of its problems to issue such a permit.

I therefore recommend that the Department enter into a consent agreement with MSP that will assess an appropriate penalty for past noncompliance, set schedules for correction of existing problems/violations, and provide stipulated penalties for failure to meet those schedules. This consent agreement should address violations that have continued or been documented subsequent to our previous referral to EPA. This process will allow us to issue a revised permit with some confidence that needed remedial actions and pollution control measures will be implemented. Specific requirements that should be included in such an agreement are as follows:

1. Containment of all process areas with provision for incineration or treatment of all potentially contaminated wastewater. This will require modifications to existing drainage and provision of dedicated tankage used solely for storage of wastewater. We should also prohibit use of contaminated wastewater for quench water as any volatile contaminants would be emitted into the air and not incinerated.

2. Decontamination and removal of all barges used for storage at the site, including the 'coal tar barge'.

3. Provision of secondary containment around all tanks used for storage of materials or wastes and development and implementation of a proper SPC plan.

4. Provision of additional outfalls as necessary to adequately monitor discharges from the facility.

5. Modification of existing outfalls to allow proper monitoring of effluent.

6. Development and implementation of appropriate management practices to prevent and/or control pollution from non-process areas.

I will be pleased to discuss these recommendations with you at your convenience.

MTF
Attachment

cc: Mr. Michael Schurtz
Mr. Robert Hannah
Dr. Richard Gregg
Mr. Kerry St. Pe'
Mr. Bruce Baird

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER POLLUTION CONTROL DIVISION

C.E.I. ____
C.S.I. ____
P.A.I. ____
Complaint ____
Other ✓

FACILITY INSPECTION FORM

Date: 2/1/88 Time In: 13:38 Time Out: 1750

Facility Name: Marine Shale Processors, Inc.

Address: Hwy 90 West / Rt 5 Box 756 Phone Number: (504) 631-3161
Amelia, LA / Morgan City NPDES Permit #: 2.
State Permit #: Applied.

Receiving Waters: Bayou Boeuf/ICWW

Location: off of Hwy 90 Facility Representative: Charles Bonner

Title: Manager

Type of Facility: Incinerator

Effluent		Operation & Maintenance		Sampling Procedures	
Records and Reports		Compliance Schedule		Laboratory Practices	
Permit Verification		Flow Measurements			

Inspector's observations, problems, remarks, verbal commitments from facility representatives:

4-Sumps in the main process area are hard-piped to the "drag-pond" and the water is pumped to the kiln. One drag-pond is situated lower than the other - at ground level. The contents of this lower drag-pond is filtered, and the water goes to the quench - (cooling water for kiln contents) The other drag-pond contents goes to the kiln to be burned.

Non-contact cooling water is piped out onto the ground near the fine aggregate conveyor - and is then routed to a drain which connects to the 001 outfall via underground pipes.

Double skinned tanks (all mud tanks near the fine aggregate conveyor tanks) contain solvents, including water from the barge in the slip, are in an area not designated as the process area. (On closer inspection, they were not "double-skinned.) Waste fluids (oily) were observed in these tanks. No secondary containment was observed.

Photographs taken: yes Samples taken: yes Facility accepted split samples: yes

Facility copy received by: Signature (X) [signature]

Title Mgr.

Report by Bruce Baird

WPC-3
Revised June 1984

White Copy-Main Office
Yellow Copy-Regional Office
Pink Copy-Facility Representative
Gold Copy-Compliance Assurance Sec.

LOUISIANA DEPARTMENT OF ENVIORMENTAL QUALITY
WATER POLLUTION CONTROL DIVISION

FACILITY INSPECTION FORM

Date: 2/1/88 Permit #: Applied

Facility Name: Marine Shale Processors, Inc

Inspector's observations, problems, remarks, verbal commitments from facility representatives (continued):

The old mud tank nearest the kiln not in use had a drain line running from the tank to a sump which connects to the OOL Solvent vapors were obvious at this sump, which held some of the cooling water. A sample was take of the water in this sump, #080-880201-01-5 for analysis of acid, base-neutral extractables, and the next 5 samples were collected for VOA, metals, COD, TOC and oil+grease, respectively.

The barge in the slip at the North end of the plant had water, to the same level as the bayou water level, in the aft rakes. A sample was taken from the bow rake, for VOA #080-880201-07-9. A strong odor was observed at the barrel cover.

The creosote pile was gone, with some contaminated loose oily water standing on the concrete pad. Waste drums + other contaminated material was observed in this area. The runoff appeared to be contained, however.

The outfall, 002 was fixed to handle expected volumes of flow, with a valved drainbox. The perimeter had been adequately leveed to control runoff and route it through the outfall.

Part of the southern end of the property appeared to slope away from the bayou, and would probably result in stormwater runoff entering the ditch by the fence. This would constitute an unpermitted discharge.

WPC-3
Revised June 1984

Received By:

White Copy-Main Office
Yellow Copy-Regional Office
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Page 2 of 2

ATTACHMENT D

AIR TEST ON MSP'S KILN

This emission test report shows that MSP failed to achieve the minimum 99.99% DRE required for incinerator permits. Although four nines were demonstrated for the so called "heavy organics" (PNA's), these materials were not evaluated using the validated VOST method, required for an approved trial burn. Of those volatiles properly tested using the VOST method, all failed to meet the required DRE. Of most significant in the following:

(1) Only 99.31% DRE was achieved for toluene, the easiest material to burn according to EPA's incinerability index.

(2) Only 99.47% DRE was demonstrated for methylene chloride, the only halogenated material tested. Based on this MSP should be restricted from burning halogenated organics. Also one test run did not meet the 4lbs/ln HCL requirement.

(3) Only 59% DRE was demonstrated for Benzene. This extremely low result could be indicative of the formation of substantial combustion by-products -- products of incomplete combustion or PICs.

(4) Even though four nines were demonstrated for naphthalene, it is doubtful that six nines could be achieved for PCBs of similar molecular structure.

(5) No process data is presented in the report, making correlation of process data with performance standards difficult. This would make this test useless for setting permit conditions to ensure routine adequate performance.

Source: Waldemar S. Nelson & Company Report of June 5, 1986, to Mr. George Badge Eldridge. Re: MSP Emission Test Report WSNCO Project 85276.

ATTACHMENT E

DELISTABILITY OF MSP ASH

The attached are excerpts from Analytical Reports on MSP "aggregate", obtained by MSP from their consulting laboratory. The available test reports covered a period of June 5, 1986 thru April 24, 1987.

MSP collects a weekly composite (according to their video) and has the composite analyzed for EP toxic metals, Total Organic Carbon (TOC) and PH.

Of the approximately 47 weeks of data available, 19 weeks composites would not meet delisting limits for metals. As of November 27, 1985 EPA has required that firms seeking to "delist" metal-bearing waste must achieve a level of no more than 6 times the National Drinking Water standards for the toxic metals specified below. 50 Fed. Reg. 48886.

In addition to the weekly composites, a test report dated March 19, 1987, for samples from various storage silos around the site, and waste piles of aggregate verify that 11 of 13 of other aggregate piles on the site failed to meet limits for cadmium and lead. These piles represent several months of production. In summary, a total of 30 of 60 ash samples failed to meet delisting limits on the basis of metals alone.

EP Toxic Levels (mg/liter in leachate)

Metal	Range of Levels in MSP Ash*	Federal Delisting Limits
Arsenic	0.4 - 3.0	0.315
Lead	0.34 - 1.6	0.315
Cadmium	0.08 - 0.44	0.063
Chromium	0.63 - 3.0	0.315
Selenium	0.15 - 0.30	0.063

* Levels not meeting delisting limits.

Considering that a minimum of 8 consecutive passing samples are required to prepare a successful delisting petition, MSP would have difficulty, based on their data, getting their aggregate delisted. Delisting is important in properly having a waste declared non-hazardous by EPA before considering the waste suitable for commerce.

Source: Analytical Results For MSP Produced By West-Paine Laboratories, Inc. June 5, 1986.

Date	Metals Not Meeting Delisting Limits
06/19/86	Lead
07/10/86	Lead
08/21/86	Lead
08/28/86	Arsenic
09/04/86	Arsenic
11/07/86	Lead
11/14/86	Chromium
12/11/86	Selenium
12/19/86	Chromium, Lead, Selenium, Cadmium
01/30/87	Cadmium
01/09/87	Lead, Cadmium
02/06/87	Cadmium
02/17/87	Cadmium
03/20/87	Cadmium, Lead
03/01/87	Cadmium, Selenium
03/10/87	Cadmium, Lead
03/13/87	Cadmium
03/27/87	Cadmium
04/24/87	Cadmium

STATEMENT OF SOLITE CORPORATION

BEFORE THE SUBCOMMITTEE ON HAZARDOUS WASTES AND TOXIC SUBSTANCES

OF THE

SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

April 14, 1988

I am John W. Roberts, President of Solite Corporation. I am accompanied by Jon Jewett, Solite's environmental counsel, Ed Martin, Vice President for Production, and Louis Lawson, Research Director of our fuels subsidiary, Oldover Corporation.

Solite Corporation is the largest manufacturer of lightweight aggregate in the United States, a business in which we have been engaged for over 40 years. All of our plants are in the eastern half of the country. We have been burning ignitable waste fuel for 14 years and for most of that period have been the largest burner of such fuel in the United States.

Lightweight aggregate is a building material that is used in concrete and masonry units in place of gravel, stone, and sand. Concrete made with lightweight aggregate has about the same strength but weighs approximately one-third less than concrete made with gravel or stone. Specifications for lightweight aggregate are established by the ASTM. There are not many counties east of the Mississippi that do not have our lightweight aggregate in some of their structures.

Lightweight aggregate is made by heating certain types of clay, shale, or slate to a temperature of at least 1,950 degrees Fahrenheit, the temperature at which they expand. The flame temperature in our kilns is approximately 3,000 degrees. The process requires a long enough kiln, high enough air flow, and a gradual enough temperature rise in the product so that at the point of incipient fusion air bubbles within the product are formed by disassociation of oxides of various metals such as

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calcium, magnesium, iron, sodium, and potassium, causing the product to expand.

When we began burning waste fuel 14 years ago, RCRA had not been enacted. For years we paid for this fuel. We began burning waste fuel because it had important advantages over coal, which is the conventional fuel that we would otherwise use. These advantages are not limited to price. The liquid, high BTU material that we burn has a much lower flash-point than coal and produces a more controllable and predictable flame. Unlike coal it does not generate fugitive dust, and it produces substantially less ash. In our experience, it is in fact a "cleaner" fuel than coal.

Solite does not oppose regulation of the burning of hazardous waste fuel. We are already heavily regulated. All of the facilities at which we burn waste fuel have RCRA "Part B" permits. Our permits impose stringent limitations on the material we can accept. The wastes that we are permitted to burn at our plants are very limited. Typically we burn distillation residues from solvent recycling, paint and ink thinners, and similar ignitable liquids. We are also subject to other limitations, including chlorine limits of 2.0% - 2.5%. Our air emissions and scrubber water discharges are also regulated by the states in which we operate.

EPA has tested both air emissions and combustion residuals at our kilns in Florida and North Carolina. These tests verified that we achieve destruction and removal efficiencies in excess of

99.99%. We have also tested the fines and scrubber water generated at all of our facilities and extensively modelled the effect of our emissions on ambient air quality.

We are confident that not only can we meet the same ultimate standards required of hazardous waste incinerators, but that what we do has major advantages over incineration as a method of disposing of hazardous waste.

Unlike incinerators, lightweight aggregate kilns must constantly maintain optimum combustion conditions simply in order to manufacture our product. If we do not maintain high kiln temperatures and high levels of excess oxygen, we simply cannot produce lightweight aggregate. To maintain these conditions we must use a relatively uniform waste fuel. We cannot and do not accept the vast majority of hazardous wastes. Incinerators, by contrast, burn a wide variety of combutible and noncombustible hazardous wastes. Incinerators and some other industrial furnaces put wastes in the "back end" of their processes, along with raw material. We do not.

The parameters which affect combution efficiency in lightweight aggregate kilns are largely fixd; fan speeds are fixed, maintaining constant excess air; the kiln length is fixed, maintaining constant residence time; and trbulence automatically results from the counterflow of raw maerial coming through the kiln from one direction with the flameinjected at a high velocity into the kiln atmosphere from the oposite direction. High temperature must be maintained to manufacture our product, and it

is easier to maintain a constant temperature in a lightweight aggregate kiln than an incinerator because of the large thermal mass created by the kiln itself and the substantial amount of product that it contains. Essentially we have a steady-state process.

A second critical distinction between our kilns and incinerators is that we burn waste fuels as a substitute for conventional fuel, and if we cease burning waste fuel we will burn coal instead. Emissions from incinerators constitute a net increase in the amount of pollution emitted into the air. In general, switching from coal to waste fuel results in a net decrease in emissions, particularly emissions of sulphur dioxide. Also, of course, we are putting the energy value of the waste fuel to an economically beneficial use.

Both cement and lightweight aggregate kilns generate large quantities of kiln dust, or "fines" as we call them, which are captured by pollution control devices. The composition of these fines closely reflects the composition of our raw materials and is minimally affected by the burning of waste fuel. Significantly more ash is generated when we are burning coal than when we are burning hazardous waste fuel. When we have tested our fines for organic constituents the levels have been non-detectable. For metals, the fines are non-EP toxic. The other lightweight aggregate manufacturer that burns hazardous waste fuel has obtained similar results. Incidentally, we frequently sell our

fines for various uses. They make an excellent landfill cover because of their very low permeability.

We have been asked for our assessment of several issues. We are happy to address these issues, but our comments are necessarily limited to the lightweight aggregate industry.

1. Current Environmental Safeguards

As previously noted, our facilities are already subject to extensive regulation with regard to the handling and storage of waste fuels and of our air and wastewater emissions. We do not believe that regulation of the burning process itself will enhance protection of public health and the environment because we must, in order to make a product, maintain operating conditions necessary to destroy hazardous constituents. However, further regulation may be appropriate for other types of devices.

2. Air Emissions

We believe that testing by EPA and by the industry shows that air emissions from the burning of hazardous waste fuel not only do not threaten public health and the environment, but actually result in less overall risk to public health and the environment than when coal is burned.

3. Problems Posed by Residuals

We are not aware of any cases of environmental problems caused by lightweight aggregate fines from the burning of hazardous waste fuel. The fines do not have hazardous characteristics, and contain less ash than when coal is burned.

4. Treatment of Solid Hazardous Waste

We do not burn solid hazardous waste in most of our kilns. At one of our plants a high BTU solid waste is pulverized and burned in the same manner as coal. However, this material is handled in a completely enclosed system, unlike coal. We burn hazardous waste only as fuel. We do not put solid or liquid hazardous waste in the back end of our kilns with feed material.

5. Need for a Recycling Permit

Although we feel that the safeguards currently in place are adequate at our facilities, we support direct regulation of burning of waste fuels under Subtitle C of RCRA. We support OSHA and MSHA requirements because they help us to do things that we should do and would do anyway, and we view regulation of the burning of waste fuels in the same light. Because of the major differences between burning for energy recovery in a lightweight aggregate or cement kiln, and the burning for destruction in incinerators, we strongly support a separate recycling permit. Both types of burning should be subject to the same ultimate standards of protection of human health and the environment, but specific technical requirements should be based on the specific characteristics of each type of device and the materials that are burned.

We are very concerned that the regulations that are now under development may not take into account the very real differences between burning for energy recovery and burning for destruction, and the differences in operation and design between

boilers, lightweight aggregate and cement kilns, and other types of industrial furnaces.

The ash generated by hazardous waste incinerators is presumed to be hazardous under the "derived from" rule. This may or may not be appropriate for incinerator ash. We believe that it is clearly inappropriate for lightweight aggregate fines and cement kiln dust. There is absolutely no reason to presume that these materials are hazardous wastes, and the practical consequences of such a presumption would be devastating. Our only options would be to stop burning waste fuel or go through the RCRA delisting process. The delisting process is extraordinarily cumbersome, expensive, and time consuming. It is wholly inappropriate to force us to go through that process in view of the nature of our fines. We have no objection to treating our fines as hazardous waste if they have hazardous characteristics, but to presume that they are hazardous is completely unwarranted.

Another requirement that may be appropriate for incinerators and boilers, but is not appropriate for lightweight aggregate and cement kilns, is the requirement for continuous CO monitoring. EPA's own studies have established that CO levels in the ranges that have been proposed as limits do not correlate with destruction and removal efficiency. CO is also greatly affected by the amount of carbon in our raw materials, which varies over time and by location. For manufacturing kilns it makes much more sense to monitor kiln temperature and excess oxygen as indicators of combustion efficiency.

These are the types of distinctions that we believe must be made between the regulations that apply to burning of hazardous waste for energy recovery in manufacturing kilns and burning for destruction in incinerators. Our concerns are more fully addressed in the comments that we submitted in response to EPA's proposed regulations, which are submitted for inclusion in the hearing record.

We appreciate the opportunity to testify before the Committee on these issues and we welcome any questions.

ORAL COMMENTS OF SYSTECH/LAFARGE TO THE SUBCOMMITTEE
ON HAZARDOUS WASTES AND TOXIC SUBSTANCES
April 14, 1988 by John F. Chadbourne, Ph.D.

Lafarge Corporation is the largest manufacturer of portland cement in North America. Systech is a wholly-owned subsidiary of Lafarge Corporation. Many people know us as "General Portland." We currently operate three "Part B" permitted hazardous waste TSD facilities in the states of California, Kansas and Ohio. Three other facilities in Alabama, Indiana and Michigan utilize hazardous waste fuels under interim status. We have been using HWF in our cement kilns to replace coal since 1979. Through these programs, safe management of over 150 million gallons of hazardous waste has been provided through combustion in cement kilns.

Lafarge Corporation is a member of the Portland Cement Association. Systech Corporation is a member of the Hazardous Waste Treatment Council. We have worked for many years with these associations, and with a number of state and federal agencies, to develop responsible hazardous waste management programs and appropriate regulations. Rather than seeking short cuts or exemptions, we have consistently applied for permits to manage hazardous waste and to control emissions. Lafarge and Systech have made a commitment to long term programs which protect public health, our workers and the environment.

Cement kilns have been shown to be an exceptionally good technology for managing hazardous waste. Combustion temperatures exceeding 3000°F and exposure to temperatures above 2000°F for three to five seconds assures

virtually complete destruction of organic hazardous wastes. Chlorinated materials are converted to potassium and sodium chloride (table salt) and these chlorides can be beneficial to maintain cement product quality. Toxic metals, such as lead, are converted to insoluble oxides. These metals are stabilized in the finished cement product or in the residual known as cement kiln dust. With the cooperation of the California Department of Health Services and other state agencies, we have extensively studied the properties of cement kiln dust and determined it does not exhibit any characteristics of hazardous waste. The natural "scrubbing" of the cement manufacturing process makes it possible to tightly control air emissions with existing highly efficient electrostatic precipitators and baghouses. In fact, burning of hazardous wastes in cement kilns can result in lower emissions, especially with regard to sulfur oxides.

In addition to destroying hazardous wastes, cement kilns are also very effective resource recovery facilities. This applies both to energy recovery and to materials recovery. Lafarge routinely replaces one-third to one-half of the fossil fuels used in many of our kilns with hazardous waste fuels. We have one kiln which has been burning 100% hazardous waste fuels for over a year. Waste water which does not contain organic contaminants can also be used to replace raw water in wet process kilns. Metals contained in the waste water become constituents of the cement product or cement kiln dust. Iron aluminum and silicon are necessary ingredients in the cement manufacturing process. Foundry or smelter residues, which may exhibit characteristics of hazardous waste, can be effectively used as cement manufacturing ingredients replacing iron, aluminum and silica from other raw materials.

Systech and Laferge believe that hazardous waste management in incinerators, industrial furnaces and boilers should be regulated regardless of whether energy recovery, materials recovery or simply destruction of the waste are involved. From an environmental perspective, the purpose of the hazardous waste activity makes little difference. Consistent regulations and well established permit programs are essential to maintain safeguards necessary to protect public health and the environment. The permit program provides a vehicle to insure that adequate waste analysis plans, procedures to prevent hazards, contingency plans, training programs and other safeguards have been addressed.

For example, Systech is one of a few companies with on-site laboratories at each facility which analyses every shipment of hazardous waste before we allow it to be unloaded. We also do extensive prequalification analyses before we allow a generator to bring a shipment to the plant. Even though people know we do these analyses, we do encounter loads which have to be returned to generators because they contain too much chlorine, PCB's, reactive materials, too much metals or not enough heat content. Some years ago, when we rejected loads at the Paulding, Ohio facility, many of the generators would say "no problem, we'll just take it down to the steel mill." We rejected one load with about 500 parts per million of PCB's and later found they had sent it to someone else to be burned. When we asked about it, we were told they didn't find any PCB's, but the truck sample we retained sure had PCB's in it. There's less of that today, but most operators of industrial furnaces know very little about what's really in the hazardous waste fuels they receive.

Some people feel the waste analyses isn't very important. After all, they're just going to burn it. But what if you have a spill or a fire or drench an employee? We think it's very important to know what your're dealing with.

We've also been surprised at what people will do when they are "exempt" from regulation or don't feel they need permits. Some years ago, Peerless Cement in Detroit decided to use sewage sludge to replace water in their slurry feed. When the slurry was fed into the cold end of the kiln and the organic contaminants evaporated, the stink was unbelievable for miles around. Sure made the newspapers that night. There's another story about a cement feed slurry tank that caught fire and the local fire department was called in to put it out. It seems the cement company was doing "resource recovery" replacing raw water with non-hazardous bilge water from a navy tanker. They pumped over a bit of jet fuel with the bilge, and being lighter than water it collected at the top of the tank. In our view, this is not responsible waste management. Good regulations, thorough permitting and waste analysis would help, but these two examples don't even concern "hazardous waste."

I would now like to make a few comments concerning hazardous waste legislation and the regulations which federal and state agencies write to implement the laws. The issues are complicated and there are many special interest groups. The agencies are under tremendous pressure to quickly develop comprehensive regulations, knowing their knowledge is incomplete and in some cases erroneous. Many companies work hard to avoid being regulated because some of the regulations don't make good sense. If you can avoid being caught up in a time consuming costly buresucratic nightmare, wouldn't you also seek to be

exempt? Systech and Lafarge have had a difficult time explaining why we want to be regulated and obtain permits when exemptions and "short cuts" are available. The answer is that we are committed to long term programs, we expect these activities will be increasingly regulated in the future and we want to participate in the development of good regulations.

This is not an easy process. We find disagreement between member companies in the Portland Cement Association and member companies in the Hazardous Waste Treatment Council. The issue of economic advantage often seems to out weigh environmental protection. I have heard people say "if I have to do it you should have to do it" even when it doesn't make environmental sense. On the other side, we have people seeking total exemption, avoiding permits and the public process or arguing that it costs to much to analyse waste or to continuously monitor operating conditions and emissions. The federal and state rules have so many caveats, it's very difficult to determine what is or is not a hazardous waste. There are listed wastes and "characteristic" wastes but listed wastes don't necessarily exhibit a characteristic of hazardous waste. If a characteristic waste is used as an ingredient in a process, I'm told it's no longer a waste. If a listed waste is used in a process, some people believe all residuals, and maybe even products, should be subject to the "derived from rule." And when one looks at the delisting process, there is another whole set of problems. Then there's Appendix VIII constituents. Most of the materials we receive are not on Appendix VIII. Most of the constituents in Appendix VIII are not present in wastes we receive. The entire area of determining what is or is not a hazardous waste needs a great deal of work.

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Systech and Lafarge have also been very surprised at some interpretations of the rules which have recently come forward to promote additional treatment capacity. For example, we are told that burning directly from transportation vehicles does not require storage and no RCRA permits are needed to burn from trucks. We also have quite a number of "existing facilities" who filed Part A permit applications on or before May 29, 1986 to obtain interim status for storage tanks they plan to build. When we point out that most of these facilities do not have state and local permits authorizing construction, we are told that only "hazardous waste control statues" apply. An existing storage facility turns out to be anyone who filed a Part A permit application even though they may have no experience in meeting regulatory requirements or safe operating procedures for managing hazardous waste.

In conclusion, Systech and Lafarge believe hazardous waste management activities should be regulated through a rigorous permit system regardless of whether energy or materials recovery are involved. In fact, our Los Robles facility in Kern County, California is a permitted resource recovery facility under California rules. We must meet the same standards anyone would need to meet for a RCRA Part B permitted treatment storage and disposal facility, even though we are a resource recovery facility. Preparing the permit application and undergoing the permit review process ensures that we develop adequate procedures to protect public health, our workers and the environment.

Testimony

of

Walter L. Greer
Vice President of Manufacturing Services
Lone Star Industries

before the

Subcommittee on Hazardous Wastes and Toxic Substances
Committee on Environment and Public Works
United States Senate

April 14, 1988

INTRODUCTION

Mr. Chairman, Members of the Committee, I am Walter Greer of Houston, Texas. I am Vice President of Manufacturing Services for Lone Star Industries (Lone Star) which has its Corporate Headquarters in Greenwich, Connecticut. Lone Star is a major producer of Portland cement in the United States. Today, I am substituting for Ron Gebhardt who recently experienced a serious illness and was unable to accept your invitation to testify. Ron is the Chairman of the Environmental Committee of the Portland Cement Association (PCA). The PCA is the research, promotion, and public affairs arm of the domestic Portland cement industry. The members of the PCA represent about 75% of the productive capacity of the industry in the United States. My comments are specifically the opinions of the management of Lone Star, but I also believe that they generally represent the views of the other members of the PCA.

I appreciate the opportunity to discuss with the members of this committee how the cement industry can participate in the important task of destroying certain liquid hazardous wastes that are generated in this country as a result of normal business and industrial activities. These wastes are currently known to us as recycled fuel. These liquids are considered hazardous primarily because of their ignitability. To a lesser extent, the hazardous designation is a result of the toxic nature of some of the constituents that may

make up a portion of the waste stream. Often, the recycled fuel is less hazardous than common commodities, such as gasoline, that are accepted by the populace as a necessary part of our environment. It is only when the word waste is associated with the use of recycled fuel that several segments of our society become intensely interested in the subject.

THE USE OF RECYCLED FUEL IN CEMENT KILNS IS NOT SHAM RECYCLING

The cement industry is not interested in the destruction of these hazardous wastes as purely a public service. The economics of the energy recovery resulting from this activity must be such that the industry can expect to reduce the cost of production of cement. If, in the pursuit of this goal, we can help to conserve the energy resources of the nation and can safely and effectively rid our environment of unwanted materials, then the industry has the capacity to act. The limited use of recycled fuel has permitted a few plants to remain economically viable in the face of competition from domestic sources and foreign cement. One cement plant in California planned to reopen on the basis of the use of recycled fuel, but was denied the opportunity due to public and regulatory opposition. When a cement company participates in the process of combustion of recycled fuel, it faces added business risk, a sizeable capital investment, a need for increased attention to the details of the production process and the burden of focused attention from regulators and the public. As a result, not all cement producers want to participate in the burning of recycled fuel. Those that do

participate, however, are entitled to a reasonable economic return for their efforts in addition to freedom from unnecessary and unreasonable regulation, and maybe even a small pat on the back.

The domestic incinerator industry is competing with the cement industry and other operators of industrial furnaces for the opportunity to burn these waste materials and make a profit. Because of their constituents or physical form, some wastes are appropriately burned in commercial incinerators where destruction of the waste is the sole aim. The waste products that compose recycled fuel, however, can be used for energy recovery as fuel substitutes in rotary cement kilns and other industrial furnaces. Lone Star believes that up to 50% of the coal that is normally used to supply heat energy to a rotary cement kiln can be safely and efficiently replaced by recycled fuel. We are recovering several billion BTUs per year of heat energy in the single Lone Star cement kiln that burns recycled fuel at an average 18% fuel replacement rate. We hope to repeat this performance at another plant in the immediate future, if the regulatory hurdles can be cleared. There are about 250 cement kilns located throughout the United States. Only a few of these kilns currently burn recycled fuel. The cement industry, therefore, represents an underutilized resource in the effort to rid the environment of some classes of hazardous waste through the legitimate recovery of energy from the waste.

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THE ECONOMIC AND REGULATORY CLIMATE FOR BURNING RECYCLED FUEL

The cement plant that burns recycled fuel must be able to obtain the recycled fuel at less cost than the primary fuel or the economic incentive of recycled fuel is absent. Typically, a cement plant pays to a broker a negotiated price for recycled fuel. The price is often a percentage of the cost of coal which is most often the primary fuel. The broker generally collects the recycled fuel constituents from generators, blends the fuel as necessary to strict standards for heating value and hazardous components, and transports the recycled fuel to a short term storage facility at the cement plant site. The generator may or may not pay the broker to take the waste. There are other fuel supply arrangements within the industry. A commercial incinerator will charge the generator for destruction of identical waste and little energy recovery is realized. Lone Star's experience to date is that recycled fuel is generally available in most locations at prices and quantities that make the burning of this fuel an attractive activity.

If domestic cement plants were paid to burn these wastes, as they are in Europe, then more cement plants would be interested in the process. In some European countries a partnership exists between cement companies and the government. If the European cement plant burns these recycled fuels and other wastes, such as PCBs, then the government assures that the company is adequately compensated for its efforts and is relatively free from the regulatory and liability entanglements that we experience in the United States. I doubt that

the political and regulatory climate will ever permit such a partnership in this country despite the obvious benefits. We also have a larger number of industrial furnaces and commercial incinerators that are competing for the waste streams. The law of supply and demand will operate to minimize the economic returns for the waste burning facility. We suspect that there may be insufficient quantities of recycled fuel in some markets to support all prospective burners of hazardous waste.

The regulatory process in the United States is expensive and time consuming. Despite all good faith efforts, the prospective burner of recycled fuel is often frustrated and is sometimes denied the necessary permits. There is a lack of recognition by the public and regulators that combustion of these wastes is currently the most acceptable method of destruction.

ROTARY CEMENT KILNS PROVIDE UNIQUE CONDITIONS FOR THE DESTRUCTION OF THE COMPONENTS OF RECYCLED FUEL

It is almost universally acknowledged that rotary cement kilns provide a unique potential for the destruction of the hazardous components of recycled fuel. The flames in cement kilns must be maintained in excess of 3000 degrees F so that a marketable product of satisfactory quality is produced. The kilns are of such length and diameter that the gas residence times range from two to ten seconds at a temperature that is sufficient to destroy the organic constituents of the recycled fuel. The highly alkaline environment

within a cement kiln has the capacity to continuously absorb the hydrogen chloride that results from the combustion of chlorinated hydrocarbons. The other organic components of the recycled fuel are converted to carbon dioxide and water. Essentially, all of the metal components of the recycled fuels either end up as a harmless element in the crystal lattice of the Portland cement or as a minor component of the cement kiln dust (CKD). CKD is the solid material that is caught by the particulate collection device that is located prior to the exhaust stack of a cement kiln. CKD is often used as an EPA approved reagent to immobilize the heavy metal components of other discarded wastes at RCRA facilities and Superfund sites. Therefore, we believe that any slight increase in the heavy metal content of CKD that may result from the burning of recycled fuel is of no additional environmental concern. Lone Star has no objection to periodically demonstrating the nonhazardous nature of CKD to the appropriate regulators for each involved facility. Lone Star would not engage in the burning of recycled fuel if a hazardous waste were the result. The cost of the regulatory requirements that are associated with the generation of a hazardous waste would negate the economic benefits that can be realized from burning recycled fuel.

THE PROPOSED REGULATORY REQUIREMENT FOR DELISTING OF CEMENT KILN DUST IS AN IMPRACTICAL TASK

We do strenuously object to the proposed regulatory requirement that the RCRA delisting procedure be followed for CKD as a result of the "derived from" rule. Under this rule, any substance that is

derived from the destruction of hazardous waste is presumed to be hazardous until proven otherwise. An illogical extension of the rule would require the delisting of the Portland cement product itself.

The delisting standards are several times more strict than the standards used for determining that an unlisted waste is hazardous. Our experience is that there is a measurable increase in the levels of some metals in the CKD that is produced during recycled fuel burning. This increase, however, has not been sufficient for a reclassification of the CKD to a hazardous waste because the leachate test results were essentially unaffected. The long regulatory delays that would be associated with the application of the delisting process to recycled fuel derived CKD would cause most operators to lose interest in the fuel. The costs and risks that would accrue to the cement plant operator in treating the CKD as hazardous until delisting was complete are simply too great.

AN INCREASE IN THE METALS CONTENT OF CEMENT PLANT STACK EMISSIONS AS A RESULT OF BURNING RECYCLED FUEL IS VARIABLE, DIFFICULT TO PREDICT AND OF LITTLE ENVIRONMENTAL CONSEQUENCE

Our experience has been that there is a slight increase in the metal content of particulate emissions from the cement kiln stack as a result of burning recycled fuel. To date, these emissions have not been determined to be of sufficient quantity to present a problem to health and the environment. Three facts should be considered to put

this observation in perspective. First, the normal quantity of particulate emissions from a cement kiln stack are very small; therefore, a slight variation in trace metal content represents a miniscule amount. Secondly, the raw materials for the manufacture of cement come from the earth's crust. The earth's crust contains all the metals. Therefore, cement raw materials contain trace amounts of metals in variable quantities. Finally, the combustion of coal can result in variable quantities of stack emissions of metals. The cement plant stack emissions will, therefore, normally exhibit small variations in metal content without the use of recycled fuel. There are several different kiln system designs for cement plants. Because of the variation in kiln design and raw materials, some kilns may be more likely than others to exhibit a measurable change in metal content of stack emissions when burning recycled fuel.

THE EPA HAS MADE AND PROPOSES TO MAKE THE BURNING OF RECYCLED FUEL IN CEMENT KILNS MORE DIFFICULT THAN NECESSARY

The EPA has had a difficult task in proposing regulations that will adequately protect health and the environment during thermal destruction of recycled fuel and other hazardous wastes. The position of EPA has changed several times as its interpretation of the provisions of RCRA has progressed. Various EPA staff sections seem to hold different opinions regarding the use of recycled fuel in cement kilns. It has been very difficult for Lone Star and the cement industry to deal with the constantly changing attitudes and requirements.

There have been several contacts between PCA staff, representatives of various cement companies and EPA staff from the Waste Combustion Section of the Office of Solid Waste. At times, these meetings have been notably frustrating to the cement industry representatives. The EPA staff presently appears unwilling or unable to reflect the significant differences in operating characteristics of rotary cement kilns and commercial incinerators in the proposed regulations. As a result, the proposed regulations appear to attempt to regulate all hazardous waste burning devices at the level of the least common denominator - the commercial incinerator. Further, the normal operating parameters of cement kilns are ignored in the standards section of the proposed regulations despite their recognition in the preamble.

THE PROPOSED CARBON MONOXIDE PROCESS CONTROL STANDARD IGNORES NORMAL OPERATING PARAMETERS OF CEMENT KILNS

The proposed upper concentration limit of carbon monoxide in the kiln exhaust gas stream is a 60 minute rolling average of 100 parts per million corrected to 7% oxygen in the gas. Some cement kilns have baseline levels of carbon monoxide that are 2-10 times higher than the proposed limit when operated with 100% coal as the fuel. The generation of this carbon monoxide has no relationship to the destruction of liquid hydrocarbons in cement kilns. Under the proposed regulations, the presence of those amounts of carbon monoxide will be interpreted as an indication of an unacceptable recycled fuel destruction efficiency. The measurement of total

hydrocarbons in the kiln exhaust gases suffers from the same shortcoming. We believe that it is more appropriate to recognize that when cement kilns are at normal operating temperatures with a predetermined minimum oxygen level in the exhaust gases, then the constituents of recycled fuel are being adequately destroyed. There is no need to make the control of any waste burning process any more complex or restrictive than is necessary to assure adequate destruction.

LONE STAR ACCEPTS THE NEED FOR SOME REASONABLE LEVEL OF REGULATION OF THE BURNING OF RECYCLED FUEL

Lone Star does not object to an initial trial burn on each kiln system that is proposed to burn recycled fuel. We would also not find limited periodic demonstrations of destruction efficiency through the use of surrogate materials to be an unreasonable requirement. Full scale demonstrations of destruction and removal efficiencies are very expensive and time consuming operations which we view to be unnecessary and unreasonable. I would like to stress, however, that our acceptance of the necessity for limited demonstrations is not motivated by a lack of confidence in the ability of a cement kiln to destroy the constituents of recycled fuel, but by a recognition that regulators, elected officials, and the public need a comfort factor. Absent the type of European partnership that I mentioned earlier, Lone Star accepts the need for reasonable and informed regulation of the entire process of recycled fuel combustion. This need covers storage, handling, burning, solid

wastes and stack emissions. In our litigious society, cement plant operators will get some comfort themselves from the umbrella of known permit and performance standards. Adequate, but not oppressive, regulation of the recycled fuel burning process will provide uniform standards for all those that wish to participate in this activity.

CONCLUSION

Lone Star and others in the cement industry have attempted to work with the EPA in developing the necessary regulations for the seemingly desirable process of burning recycled fuel for energy recovery in our plants. We feel that the proposed regulations ignore basic scientific and engineering facts to the degree that the cement industry may not be able to participate in the process of destruction of hazardous wastes. Lone Star and other members of the industry have communicated our objections and suggestions for improvement to a largely unresponsive EPA. We hope that these hearings will contribute to a more rational approach to the subject of burning recycled fuel in cement kilns.

Thank you for the opportunity to testify here today.

Statement by

George Badge Eldredge

on behalf of Marine Shale Processors, Inc.

before the Subcommittee on Hazardous Wastes and Toxic Substances

of the Committee on Environment and Public Works

United States Senate

April 14, 1988

Good morning, Mr. Chairman. My name is George Badge Eldredge and I am Vice President and General Counsel of Marine Shale Processors.

Mr. Chairman, we did not ask for this hearing, but we are delighted to be here today to tell the Marine Shale story.

But before getting into the particulars, let me mention a bit of the legislative and regulatory rationale of the Resource Conservation and Recovery Act.

Since the earliest environmental statutory provisions were enacted, the emphasis has been on finding a way to encourage generators of hazardous waste to stop producing waste, and when they could not do so, to find a way to beneficially reuse the waste materials. Necessarily, the EPA was required to find a way to deal with the waste which had been generated already and the new waste being generated every day. Unfortunately, the early

waste control regulations were directed at encapsulating the problem.

With the reauthorization of the Resource Conservation Recovery Act in 1984, it was clear that Congress expected recycling to take the place of current disposal practices. Congress demanded that land disposal be limited and in some cases banned altogether. Further, Congress demanded that generators initiate programs to minimize their waste production.

"Recycling" is in reality the development of technology which makes it possible to use yesterday's waste as today's resource. The green tailings which were discarded as waste by the Spanish conquistadors some 350 years ago are now in great demand because they are platinum. The bark which was once removed from the tree and discarded prior to the pulping process is now used as a fuel for the boilers in the paper industry. The liquid organic solvents which were once deep welled, flared off, or incinerated, are now used to fuel industrial furnaces.

Considering the potential liability problems faced by generators sending their materials to facilities which eventually land dispose all or a portion of the waste, and considering the high cost of disposal, recycling is by far the best solution. Today, the technology exists to use a variety of hazardous waste-derived fuels in manufacturing processes, to recover valuable

minerals and metals from waste, and to make non-toxic products from waste.

At best, disposal techniques preserve and store today's hazardous waste for future generations. At worst, some disposal techniques actually increase the volume of waste.

On the other hand, recycling technology represents the prospect of totally eliminating toxic waste. This is especially true in manufacturing processes producing products which are toxic free. If done properly, no new waste is created, and the old waste is gone forever.

Now, Mr. Chairman, let me move from the general to the specific and describe how Marine Shale operates -- both on a day-to-day technical basis and with respect to the stringent regulatory regimes, both federal and state, which apply to us.

The manufacturing, handling, distributing, and sales of aggregates are not new to the management and supervisory personnel of MSP. Most of our top people have been heavily involved with aggregates since 1969. Sands, gravel and other aggregates were supplied to build major federal and state projects such as sections of Interstate 10 in Mississippi, the Stennis International Airport, levee projects for the Corps of Engineers, the New Orleans International Airport, the U.S. Naval Air Station at Belle Chase, and the National Space Technology Lab at Bay St. Louis, Mississippi. In addition, these individuals designed and

operated the most modern barite grinding and production facilities in the world.

These projects and activities required extensive knowledge of materials handling equipment, rotary dryers, refractory, and air pollution control equipment. All were controlled by computerized process control equipment. All were subject to environmental controls for water discharges and air emissions. All required extensive testing of the raw materials and of the final product to insure that the stringent ASTM test requirements were met. During the four years of barite grinding and production, the operations were never cited for water discharge or air emission violations.

Marine Shale Processors occupies the site of a former lime plant located near Morgan City, Louisiana, an hour's drive west of New Orleans. The plant was purchased in late 1984 and modernized and retrofitted at a cost of millions of dollars in 1985, and the result is a 275-foot long, 12-foot in diameter rotary kiln that recycles a variety of industrial waste materials from companies and government agencies throughout the U.S. These materials are thermally processed for a period of about two and one half hours at approximately 2250° Fahrenheit in the furnace and at approximately 2500° Fahrenheit in the oxidizers. The result is an environmentally benign product: a safe aggregate

that is used in south Louisiana and Mississippi where there is a lack of natural aggregate.

The industrial furnace operated by MSP is currently subject to EPA's RCRA general facility regulations found at 40 CFR 264, subparts A-L and 40 CFR 265, subparts A-L. These provisions include requirements for manifesting, storage, waste analysis plans, contingency plans, emergency response plans, training plans, safety plans, inspection plans, and financial requirements.

Although Subpart O of 40 CFR Parts 264 and 265 is not applicable to the MSP facility, after extensive public hearings the State of Louisiana issued an air quality permit for the facility based on stringent stack testing. The permit includes requirements which are substantially similar to or in some cases more stringent than the requirements which will be applied to incinerators under a Part B RCRA permit.

Compliance with the RCRA provisions and the air quality permit insures that health and the environment are protected from adverse environmental impacts. Continuous carbon monoxide, oxygen and temperature monitoring over the last 2-1/2 years has proven the capability of the MSP industrial furnace to continually meet or exceed the 99.99% destruction removal efficiency as required in the air permit.

Facilities operated like the MSP industrial furnace pose a substantially lower threat to the environment than traditional

petro-chemical manufacturing facilities. They do so while using materials as a resource which would otherwise have been placed in a landfill. This results in a savings of natural gas and other natural resources. The only losers in this process are those who want to continue to throw away our resources to make a profit.

Today, fuel blenders across the country take the pumpable liquids from hazardous waste drums and send the resulting fuel to cement, aggregate and asphalt kilns where it is used as a substitute for natural gas. The sludges and solids that cannot be pumped from the drums are sent to MSP where any remaining liquids are separated and used as a fuel, and the solids are used as a raw ingredient to form chemically clean aggregate which is used as a substitute for naturally occurring aggregates.

Before we go further, I would like to respond to the allegation that Marine Shale is unpermitted and unregulated. Nothing could be further from the truth. I am attaching to this testimony copies of our air and other permits. The following is a comparison of the air standards under which we operate as compared with those of one of our competitors.

MARINE SHALE PROCESSORS, INC.	ROLLINS ENVIRONMENTAL SERVICES
CURRENT OPERATING REQUIREMENTS:	CURRENT OPERATING REQUIREMENTS:
1. Destruction Removal Efficiency of 99.99%.*	1. NO REQUIREMENT.
2. 80 ppm CO limit with 60 second maximum.*	2. NO REQUIREMENT.
3. 2% O_2 minimum with 60 second maximum.*	3. NO REQUIREMENT.
4. 1600 F minimum in oxidizer with a 60 second maximum.*	4. NO REQUIREMENT.
5. TSP - 41.0 tons/year.*	5. TSP - .22 tons/year.**
6. SOx - 60.0 tons/year.*	6. SOx - 100.7 tons/year.**
7. NOx - 86.0 tons/year.*	7. NOx - 140.2 tons/year.**
8. Hydrocarbon - 0.44 tons/year.*	8. NO REQUIREMENT.
9. CO - 0.22 tons/year.*	9. NO REQUIREMENT.
10. NO REQUIREMENT.	10. HCL - 16.2 tons/year.**
11. Must continuously monitor CO, O_2, and temperature.	11. Must monitor existing equipment at least every 15 minutes and make appropriate corrections to maintain steady state combustion conditions. (Section 23.110(a) of LHWR and 40 CFR 265.347(b).
12. Must have backup monitoring equipment for CO, O_2, and temperature.*	12. NO REQUIREMENT.
13. Must automatically shut off fee if CO, O_2, or temperature limitations are exceeded.*	13. NO REQUIREMENT.
14. Must maintain a detailed inspection plan.*	14. NO REQUIREMENT.
15. Must maintain and follow a detailed Preventative Maintenance Plan.*	15. Must inspect equipment daily. (Section 23.110(b) of LHWR and 40 CFR 265.347(b).
16. Must not feed ingredients or waste derived fuels into the furnace unless in compliance with conditions 1-14 above.	16. Must not feed waste unless the incinerator is at steady state (normal) conditions of operation, including steady state operating temperature and air flow. (Section 23.109 of Louisiana Hazardous Waste Regulations (LHWR) and 40 CFR 265.345.)
17. Must comply with all applicable RCRA provisions of 40 CFR 264 and 265 Subparts A-L.	17. Must comply with all applicable RCRA provisions of 40 CFR 264 and 265 Subparts A-L.
*Required by Louisiana Air Quality Permit Number 1036-M issued January 3, 1986.	**Required by Louisiana Air Quality Permit Number 8 issued November 13, 1969.

The Marine Shale approach is revolutionary in its environmental technology. Up until now, the "business as usual" approach to hazardous waste was to run the waste through a 17-foot incinerator; to be sure, the volume of the solids was reduced, but the "product" of the incinerator was still hazardous, and the owner had to pay others to haul off the "product" to a landfill, costing him substantial amounts of money, but, worse, further contributing to the landfill crisis throughout the country.

Worse yet, the process reducing the volume of the solids results in the production of hazardous waste waters in amounts three to fifty times greater than the amount of materials initially placed in the incinerator. In other words, incinerators are net waste producers, not reducers. These large volumes of hazardous waste waters are discharged into the ground waters via injection wells or pumped into the nation's rivers and streams.

The Marine Shale approach, on the other hand, avoids the cost of moving the remaining waste to a landfill and monitoring the landfill for eternity because there isn't any remaining waste. The Marine Shale approach is making hazardous waste history -- it doesn't have to be moved to a hazardous waste landfill because the product is clean. Testing by MSP, EPA contract labs and Fortune 500 companies has consistently demonstrated that products sold by MSP do not demonstrate hazardous characteristics. It is clean. It is a useful product. It is no longer a waste.

MSP presently manufactures two highly desirable aggregate products. The first is a highly absorbent aggregate useful for solidifying pits, ponds, and lagoons. It is also useful as a fill in wet areas where its high compaction properties are needed. The second is a rocklike material which is nonabsorbent. Because of its excellent drainage characteristics, this material is used as a fill material where drainage is required. This material is a direct substitute for Atchafalaya River sand. New products are under development.

The unique ability of MSP to use all accepted materials and all by products from the manufacturing process insure that there are no "residuals." Kiln dust, scrubber dust, and process waters are reused in the manufacturing process. Even the once contaminated cans, drums, and other metals are shredded, fed through the kiln, (where the pieces are cleaned) and then recovered and sold at a premium for use in the production of new steel.

This is, of course, good for the environment. The aggregate that is sold by MSP is so clean that it can be used immediately. No landfill needs to be opened up, or overloaded. The hazardous waste is gone, once and for all. And Marine Shale meets air emission standards its obsolete competitors cannot.

All of this has proven to be good economics for both the owners of Marine Shale and their industrial customers. Generators

of certain recyclable materials use MSP in increasingly large numbers, finding MSP's charges considerably below those of MSP's competitors. Despite the higher cost of making a safe product, MSP still makes a profit because rather than having to pay someone at the other end to haul waste off to a landfill, it can be sold because it has been recycled into a safe product. Approximately, 120,000 tons of wastes have been recycled in the last two years. That is good for the owners of Marine Shale, good for its customers, and, most important, good for the environment.

But that is also precisely what has generated the current controversy. The owners of the obsolete incinerators understand that they currently cannot compete in the marketplace against Marine Shale's technology.

Increasingly, they watch their customers heading south for Louisiana. They are not making it on a level playing field, and, so, rather than trying to update and modernize their technology of yesterday or spending the money to get to the next generation of technology, they are in Washington, D.C., trying to get one branch of government or another to outlaw Marine Shale's advanced technology. They even have an association and a staff committed to eliminating Marine Shale as a competitor. It is as though the buggy manufacturers in the early part of this century had organized, formed an association, and asked the government and

the courts to outlaw Henry Ford's Model T because he was building cars under a "loophole" to the horse and buggy law.

There is a problem. Does RCRA (the Resource Conservation and Recovery Act) envision land disposal and destruction or conservation and recovery (recycling)? Regulation of disposal and destruction is well entrenched and is working. Regulation of recycling is coming. If it insures that other recyclers are protective of the environment (as is MSP), then the regulations are desirable. If not, they need to be strengthened.

Encouragement of environmentally safe recycling will insure that the Congressional mandate to end land disposal will be realized. By recognizing recycling, the uncertainty in the public's mind will end. This will insure that conscientious segments of the cement, aggregate, and smelting industry will continue to recycle hazardous waste.

MSP's competitors, through their trade association, the Hazardous Waste Treatment Council, went to the EPA over a year ago, asking that MSP be shut down. After a lengthy investigation, the Agency concluded no such action was necessary, saying "The latest information we have is that Marine Shale poses no imminent or substantial threat to the environment or to public health." An investigation by the Lands Division of the Justice Department is still ongoing.

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Thus, unsuccessful in their attempts to get agencies of the Executive Branch to shut down MSP, and daily losing business, the Council and its members are now asking the two other branches of government for help in keeping the new technology off the market. For example, once your Subcommittee scheduled this hearing on "sham recycling", our competitors told our customers that the Congress had labeled us a sham, and the Council has said in a February 22 letter that it intends to go to court as well by filing a "citizen's suit."

Indeed, Frank Willis, Rollins Environmental Services (LA), Inc. Chairman of the Board and CEO, visited Morgan City on February 19 to organize citizens against the plant (they found three) and to secure signatures on legal documents to initiate the suit. While there, he was asked why MSP should not be in business. His answer? "MSP's prices are too low." That is absolutely true: MSP is making money; its competitors are losing business; and they are now in Washington trying to get Congress to legislate away a technology that has taken business from them and trying to get the courts to do what the other branches of government have thus far refused to do.

The Council argues that MSP should be governed by the same set of regulations that govern the old-fashioned 17-foot incinerators under the Resource Conservation and Recovery Act. But that misses the mark for two reasons. First, if the MSP

approach, and its 275-foot thermal processing plant, is a better, more environmentally desirable process, then it would be contrary to sound public policy to treat it like the 17-footers. To do so would guarantee that no one would ever spend the substantial amount of capital necessary for such advances in technology.

Government policies should encourage, not discourage, this advanced technology, or, at worst, leave it alone. Let me expand upon this for a moment. The chart attached to this testimony compares heavy metals found in the drums we take in, the aggregate that we produce, and what EPA considers safe in drinking water. I think you will agree the results are startling -- and encouraging.

Second, MSP is fully in compliance with all federal, state, and local laws and regulations applicable to recyclers. It meets Louisiana air quality standards that its competitors can't. It meets all federal RCRA requirements applicable to waste recyclers including all interim status standards for storage, groundwater monitoring, financial assurance and recordkeeping. And MSP goes even further than the law requires, testing its aggregate frequently, not only to meet EPA tests, but also to ensure that the product is non-hazardous. Yet the Council feels that MSP's ability to operate as a recycler without a RCRA incineration permit is a "loophole".

But a "loophole", as we see frequently in the tax law, can also provide incentives for investment and improvements in technologies as have occurred here. MSP is in full compliance with the law as it exists. And if the law encourages such new and advanced technologies that turn waste into a useful product, as does Marine Shale, that is a good thing.

MSP does not object to regulation, or to the law or the regulations being changed, but on the other hand, it believes treating the 17 footers and the new technology alike would be counterproductive to the Nation's environmental goals. Now let me be quite precise, because we have arrived the very essence of the matter. I invite the Subcommittee's attention to the next chart attached to this testimony. The first horizontal regimen outlines the process under which the old technology operates. The second outlines how we operate under current law -- a regimen which our competitors call a loophole and we believe to be an incentive. The third is a regimen that we understand EPA is and will be proposing as a solution to the whole controversy: a tightly regulated regimen that will impose stringent tests for burning; in short, EPA's so-called "burning and blending regs" which will impose stringent standards on the Marine Shales of the world.

And a little known fact, Mr. Chairman and members of the Subcommittee, is that Marine Shale has absolutely no problem with these proposed regulations as we understand them. What MSP does

have a problem with, Mr. Chairman, is the attempt by its competitors to force it under the old incinerator regulations where interim status is available to its competitors but would not be to MSP.

Thus, under this approach, Marine Shale, perfectly legal today, and perfectly legal three or four years from now when it obtained its Part B, would be shut down cold while the government gave a monopoly to its competitors and the nation has lost a tremendously desirable alternative to land disposal in the process. That is what our competitors are asking you to do, and that is what, in our view, you should refuse to do. So, as we have said, MSP does not object to being regulated. Indeed, the Company looks forward to working through the public rulemaking process with EPA to fashion a regulatory framework that is fair and equitable. In the meantime, it would urge the members of the Hazardous Waste Treatment Council to abandon their efforts to secure from government what they are unwilling to try to achieve in the marketplace, or pay for.

Thank you very much, Mr. Chairman. I will be happy to respond to questions.

PERMITS AND AUTHORIZATION

PERMITS AND AUTHORIZATIONS

Effective January 1, 1986, MSP obtained interim status under the Hazardous Waste Program for the storage of hazardous waste. MSP has submitted its notifications to both the State of Louisiana and the Environmental Protection Agency, and has submitted its Part A Application for storage to the State of Louisiana. By letter dated June 9, 1986, the Louisiana Department of Environmental Quality confirmed that MSP does have interim status.

The facility is not required to have a hazardous waste incinerator permit since it is a manufacturing, rather than a disposal operation. As a manufacturer, MSP recycles various materials which would otherwise be classified as wastes (including hazardous waste). The recycling activities are subject to the Louisiana Hazardous Waste Recycling Regulations which are substantially the same as the federal provisions in 40 CFR 266.

On January 3, 1986, the Louisiana Department of Environmental Quality issued a modification to the MSP facility's Air Quality permit. This Permit provides in Condition 11 that the facility can utilize any material in its kiln as a raw ingredient and/or fuel.

Although the MSP plant is a manufacturing facility and not subject to the hazardous waste incineration requirements, its Air Quality Permit is based on the same considerations applied to Part B hazardous waste incinerators. The facility's air emissions were subjected to stringent stack testing for all POHC's. Based on this stack testing which demonstrated the ability to achieve 99.99% DRE's, MSP was authorized to operate its plant. The permit requires that the plant continuously monitor CO, oxygen, and temperature, and to operate within the limitations set forth in its permit.

MSP is in full compliance with its Air Quality Permit. Carbon monoxide, oxygen, and temperature monitoring instruments have been installed. In addition, an automatic feed cutoff system is in operation.

MSP operates under the most stringent Air Quality Permit in the nation. Hazardous waste disposal and incineration facilities operating under interim status are not subject to strict operational standards and conditions. Indications are that EPA will propose standards for hazardous waste incineration units awarded Part B Permits which are significantly less stringent than those under which the MSP facility operates.

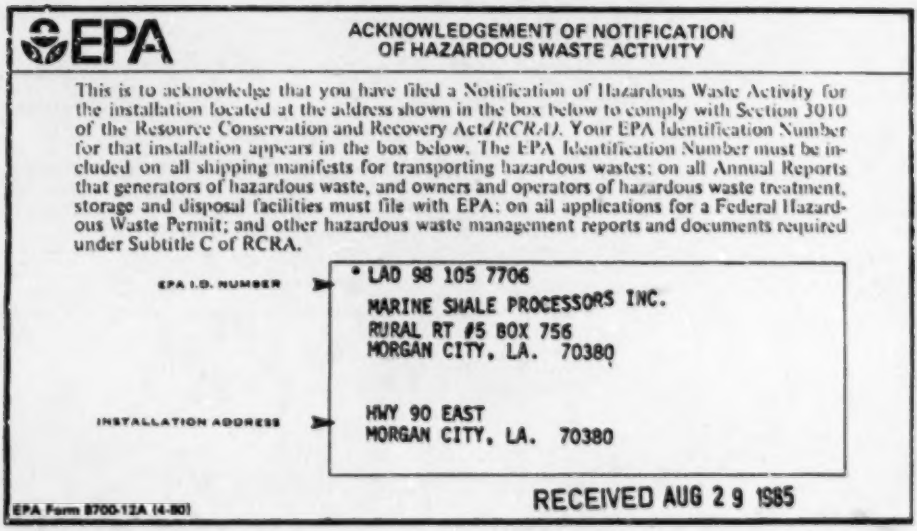
While EPA is proposing a CO limit of 500 ppm with automatic feed cutoff required if that limit is exceeded for more than five minutes, the MSP permit requires automatic feed cutoff if a CO limitation of 80 ppm is exceeded for more than 60 seconds. MSP has met the strict permit requirements for over a year.

The plant utilizes a Bailey Network 90 Process Control System to control the entire kiln process, including the automatic feed cutoff. This system is the most technologically up-to-date system available on the market. The stack height has been increased as required by the permit and the required monitoring, maintenance, and inspection plans have been submitted to the State.

MSP has a State Water Quality Permit and a Federal NPDES Water Discharge Permit. However, due to the water intensive nature of the aggregate manufacturing process, water generated at the site, including storm water, is collected and utilized in the manufacturing process. The facility does not discharge water except uncontaminated storm water.

PERMITS CHRONOLOGY

January 9, 1985	Louisiana Office of Conservation Nonhazardous Oilfield Waste Permit Number OWD 85-1 was issued. This permit authorizes MSP to recycle various oilfield wastes.
January 18, 1985	The facility's Air Quality Permit was transferred from the previous owner of the facility to MSP.
January 22, 1985	Louisiana Department of Environmental Quality issued Water Discharge Permit WP 1098 to MSP.
April 1, 1985	St. Mary Parish Council granted a permit to MSP to recycle oilfield waste.
July 23, 1985	Louisiana Department of Environmental Quality authorized the use of recyclable materials (hazardous waste) as ingredients and fuels.
August 1, 1985	Louisiana Department of Environmental Quality authorized the use of various recyclable materials (solid waste) as ingredients and fuels.
October 1, 1985	Louisiana Department of Environmental Quality granted MSP permission to make aggregate for sale to the public.
January 1, 1986	MSP obtained interim status for the storage of hazardous waste.
January 3, 1986	Louisiana Department of Environmental Quality issued a modification to MSP's Air Quality Permit which makes it clear that the plant is permitted to utilize any raw ingredient or alternative fuel which does not cause the plant to exceed the emission standards set forth in the Air Quality Permit.
June 9, 1986	Louisiana Department of Environmental Quality issued a letter confirming that the MSP facility at Amelia, Louisiana, is a legitimate reuse-recycle facility and that the facility does in fact have interim status.
July 12, 1986	The United States Environmental Protection Agency issued NPDES Permit Number LA0067351 to MSP.
July 22, 1986	Louisiana Office of Conservation modified the plant's Oilfield Waste Permit Number OWD 85-1 to make the regulation of the facility consistent with Department of Environmental Quality regulations.



EPA

ACKNOWLEDGEMENT OF NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act (RCRA). Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA I.D. NUMBER ➤ * LAD 98 105 7706

MARINE SHALE PROCESSORS INC.
RURAL RT #5 BOX 756
MORGAN CITY, LA. 70380

INSTALLATION ADDRESS ➤ HWY 90 EAST
MORGAN CITY, LA. 70380

EPA Form 8700-12A (4-80)

RECEIVED AUG 2 9 1985

Permit No. LA0067351

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C... 1251 et. seq; the "Act"),

Marine Shale Processors, Inc.
P.O. Box 1649
Slidell, Louisiana 70459

is authorized to discharge from a facility located near Amelia, west of the Bayou Chene-Bayou Cocodrie Junction

to receiving waters named Bayou Boeuf

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I (4 pages), II (14 pages), and III (2 pages) hereof.

This permit shall become effective on July 12, 1986

This permit and the authorization to discharge shall expire at midnight, July 11, 1991.

Signed this11th day of July 1986

Myron O. Knudson, P.E.
Director, Water Management Division (6W)

State of Louisiana

WP 1098

DEPARTMENT OF ENVIRONMENTAL QUALITY

Water Discharge Permit

Pursuant to the Louisiana Environmental Quality Act (La. R. S. 30:1051 et seq; "The Act") as amended, Rules and Regulations effective or promulgated under the authority of the Act, and in reliance on statements and representatives heretofore made in the application, a Permit is issued authorizing

Marine Shale Processors, Inc.
P.O. Box 1649
Slidell, Louisiana 70459

Type Facility: Drilling wastes treatment

Location: Near Amelia, west of Bayou Chene - Bayou Cocodrie Junction

Receiving Waters: Bayou Boeuf

to discharge in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and III attached hereto.

This permit is effective on the date of issuance.

Issued this the 22nd day of January 1985

J. Dale Givens

J. Dale Givens, Assistant Secretary
Office of Water Resources

PATRICIA L. NORTON
SECRETARY

OFFICE OF SOLID AND HAZARDOUS WASTE

JOHN KOURY
ASSISTANT SECRETARY

June 9, 1986

Mr. John M. Kent, President
Marine Shale Processors, Inc.
Post Office Box 1649
Slidell, Louisiana 70549

Dear Mr. Kent:

Re: Marine Shale Processors, Inc. Reuse-Recycle Facility
LAD981057706

This letter confirms that the rotary kiln operated by the Marine Shale Processors, Inc. located at Amelia, Louisiana is a legitimate reuse-recycle facility and may accept hazardous waste for recovery of energy and/or materials in accordance with the Louisiana Hazardous Waste Regulations. In addition, the facility has interim status as a storage facility and may receive any hazardous waste for storage prior to reuse and/or recycling if such waste has been listed in the facility's Part I Permit Application or in any subsequent approved revisions to that application.

Sincerely,

John Koury

JOHN KOURY
Assistant Secretary

JK:pck

cc: Office of the Secretary
Hazardous Waste Division

AIR QUALITY

Modifications to Permit #1036, January 3, 1986

Marine Shale Processors shall be permitted for the following emissions from Kiln #5:

	Kiln #5	
Pollutant	**Lbs/Hr**	**Tons/Year**
TSP	9.5	41.0
SO_2	15.0	60.0
NO_x	20.0	86.0
* Hydrocarbon	0.1	0.44
CO	0.05	0.22

* Hydrocarbon emissions shall not exceed a level equivalent to at least 99.99% destruction and removal efficiency for hydrocarbons entering the kiln as auxilliary fuels and/or raw ingredients which would otherwise be classified as hazardous waste.

Marine Shale Processors shall comply with the following specific permit conditions:

1. Increase the height of the emission point for the rotary kiln within 90 days of the date of this permit in order to avoid atmospheric downwash and minimize concentrations of air emission in the immediate vicinity.
2. Immediately cease emissions of fugitive air contaminants from the rotary kiln.
3. Install and begin operating within 90 days of the date of this permit instrument systems to continuously monitor carbon monoxide (CO) emissions from the rotary kiln and temperature in the afterburner or other location approved by the Department. The systems shall be capable of measuring 10 ppmv for CO and 1000°F for temperature. These systems shall include continuous strip charts to record the data. The records of these strip charts shall be maintained at the site and made available to the Department staff upon request.
4. Install and begin operating within 90 days of the date of this permit an instrument system to continuously monitor excess oxygen (O_2) in the afterburner. The minimum measurement sensitivity shall be at least 0.1%. This system shall include a continuous strip chart to record the data. The strip charts shall be maintained at the site and made available to the Department staff upon request.
5. Install and begin operating, within 180 days of the date of this permit, backup CO and afterburner temperature monitoring systems. The procedures specified in the monitoring plan shall be followed for these systems unless otherwise required by the Department.
6. Install and begin operating within 120 days of the date of this permit an automatic feed cutoff system. Such system shall automatically cut off the introduction of ingredients to the rotary kiln if:

   i) the CO as measured by either monitoring system required herein exceeds 80 ppm for more than sixty consecutive seconds; or

   ii) when the afterburner is used for hydrocarbon destruction, the temperature as measured in the afterburner by either monitoring system required herein falls below 1600°F or exceeds 2500°F for more than sixty consecutive seconds; or,

   iii) the excess oxygen as measured by the system required herein falls below 2.0% for more than sixty consecutive seconds.

These cutoff requirements shall be applicable during all phases of operation including startup. The afterburner shall be utilized as needed to insure the destruction and removal efficiency of hydrocarbons entering the kiln as auxilliary fuels or associated with recoverable materials is equal to or greater than 99.99%.

7. Submit to the Department within 120 days of the date of this permit, a plan which specifies the location, precision and accuracy, and calibration and maintenance procedures to be utilized for the instrument monitoring systems discussed in 3 above. The plan shall include a daily multipoint calibration method for the CO systems. Calibration shall be accomplished using gases traceable to the National Bureau of Standards.

8. Submit to the Department within 90 days of the date of this permit a detailed preventive maintenance plan for the critical equipment involved in the operation and monitoring of the rotary kiln and the associated pollution control systems.

9. Submit a report to the Department within 45 days of installation of the CO initial monitoring system which describes the operating conditions and materials and afterburner temperature for all periods of time for which CO levels measured by the monitoring system required herein exceeds 50 ppmv. The report shall cover the first 30 days of operation of the CO monitor. A second such report for the second 30 days of operations of the initial CO monitor shall be submitted within 75 days of system installation. The second report shall include excess oxygen monitoring data obtained from the O_2 monitoring system. Based on these reports, the Department may revise the CO limitation to more accurately reflect the facilities operations.

10. Notify the Department in writing at least two working days in advance of the receipt of raw ingredients which have not been previously utilized by the facility. Such notification shall contain a chemical analysis of the material including halogens, metals, BTU content and solids content.

11. Marine Shale Processors is permitted to utilize such raw ingredients and alternative fuels which do not cause it to exceed the emissions permitted herein and which are allowed for use under applicable State and Federal environmental regulations.

12. The standard ten air emission permit conditions attached hereto shall be a part of these permit conditions.

EDWIN W. EDWARDS
GOVERNOR

PATRICIA L. NORTON
SECRETARY

January 3, 1986

Mr. John M. Kent
Marine Shale Processors, Inc.
Rural Route 5, Box 756
Morgan City, LA 70380

Re: Permit #1036 M-1

Dear Mr. Kent:

Please find enclosed a set of modifications to the air quality permit for Marine Shale Processors, Amelia facility, which is effective this date.

If you have any questions concerning the air quality permit as modified, please contact Greg Gasperecz at 504/342-1201.

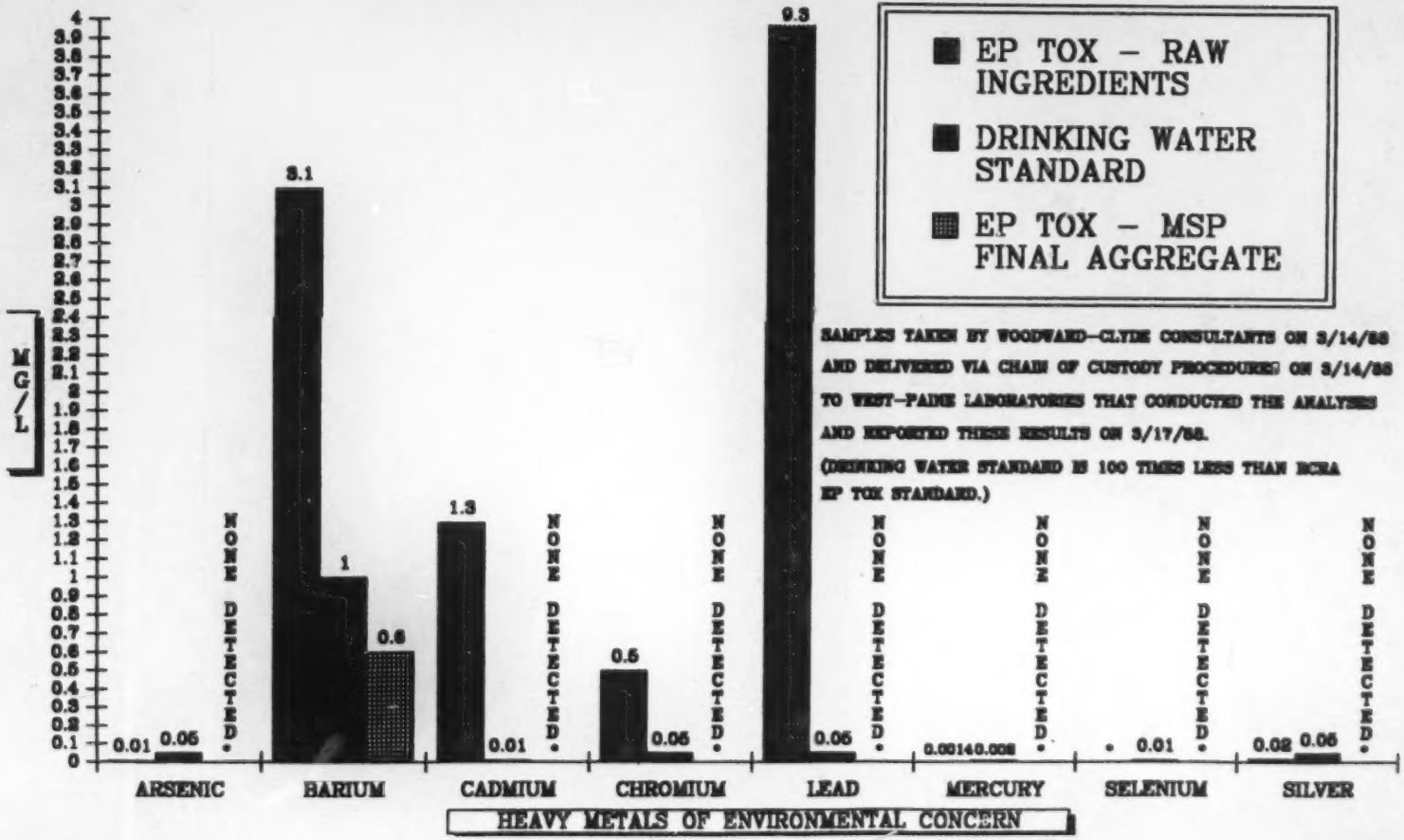
Very truly yours,

Patricia L. Norton
Secretary

PLN:GJG:jcp

Enclosure

COMPARISON BETWEEN REGULATORY STANDARDS AND MSP AGGREGATE



SAMPLES TAKEN BY WOODWARD–CLYDE CONSULTANTS ON 3/14/88 AND DELIVERED VIA CHAIN OF CUSTODY PROCEDURES ON 3/14/88 TO WEST–PAINE LABORATORIES THAT CONDUCTED THE ANALYSES AND REPORTED THESE RESULTS ON 3/17/88.

(DRINKING WATER STANDARD IS 100 TIMES LESS THAN RCRA EP TOX STANDARD.)

Statement

of

R. Darryl Banks, Ph.D.

Deputy Commissioner for

Environmental Quality

New York State Department of Environmental Conservation

Before

The

Subcommittee on Hazardous Wastes and

Toxic Substances

U.S. Senate

April 26, 1988

Mr. Chairman, Members of the Subcommittee:

I am pleased to be here today to testify regarding New York State's experience with burning waste in cement kilns.

Hazardous organic wastes are a significant component of our hazardous waste stream. New York State's primary long-term strategy for dealing with these wastes is to encourage waste minimization and recycling. However, even under a scenario of maximum waste reduction and recycling, there are considerable quantities of hazardous waste liquids and oils that will have to be disposed of by alternate technologies. For example, over 127,000 tons of both halogenated and non-halogenated organic solvents were generated in New York State in 1986 with about 7,390 tons of these wastes disposed of in our state. An additional 6,100 tons per year of such wastes are now brought into our state for disposal.[1]

At present, commercial hazardous waste incineration capacity is very limited in New York State. We have no large scale commercial hazardous waste incinerators for off-site waste disposal. However, two types of existing industrial kilns (portland cement and lightweight aggregate kilns) have the potential to successfully destroy large quantities of organic liquid wastes and waste oils with substantial energy recovery. For example, the largest waste fuel cement kiln burning project proposed to date in New York State could burn about 20 million gallons of liquid organic wastes per year.[2]

Burning wastes in cement kilns first began in Canada in 1973. Since that time, these hazardous waste fuel burning operations have expanded considerably, especially in Europe, and, in particular, Scandinavia.[3, 4] There are a total of eight cement and lightweight aggregate firms burning hazardous waste fuels in the United States today in 35 process kilns.[3]

There are three facilities that currently are seeking permits to burn hazardous waste liquid fuels in New York State -- two portland cement plants and one lightweight aggregate plant. The Lehigh Cement Company, located in Cementon, New York, began burning industrial organic solvents as part of a demonstration program in the late 1970's when the plant was owned by the Alpha Cement Company. In 1985, under a demonstration permit, this company carried out a trial burn that demonstrated 99.999% destruction and removal efficiency (DRE) for several principal organic hazardous constituents (POHC).[2] This company is now applying for a permanent hazardous waste incineration permit. The Blue Circle Atlantic Cement Company in Ravena, New York, has submitted a RCRA permit application to our agency to burn approximately 20 million gallons of chemical solvents and waste oils annually at its Ravena, New York, facility. They have also obtained a major demonstration grant from the New York State Energy Research and Development Authority to finance part of this project. The Norlite Company, a producer of lightweight aggregate, has been burning hazardous waste fuels at its Cohoes, New York, facility since 1979. They had previously received air and hazardous waste permits to burn waste fuels from our agency in 1983. As you are aware, Mr. Chairman, at that time facilities burning hazardous waste for energy recovery were exempt from most RCRA regulations. In 1986, the Department eliminated the energy recovery exemption from the New York State RCRA program; and, subsequently, Norlite has submitted an application to our agency for a RCRA permit and will conduct a trial burn scheduled for the spring of this year. This firm is also now improving its process air cleaning systems to minimize particulate emissions.

Cement Kiln Technology

Portland cement is produced in large horisontal rotary kilns lined with refractory brick. These kilns are quite large and can range up to 700 feet in length. They are counter-current kilns where feed is fed through one side and raw materials through the end of the kiln, with the finished product exiting at the firing end side of the kiln.[5] Most cement kilns burn coal today and have flame temperatures in excess of 3000°F. The cement processing temperatures further down the kiln must be about 2800°F in order to form tricalcium silicate, a major cement component.[3, 4] Generally the burning zone of a cement kiln can be expected to have temperatures in excess of 2600°F with residence times ranging from at least 3 seconds for small kilns to more than 10 seconds for large kilns.[3, 4, 10] Because the entire (gas) residence time throughout a cement kiln is usually greater than 6 seconds, a cement kiln always has burning conditions in excess of the USEPA Toxic Substances Control Act (TSCA) provisions for burning PCBs -- that is, 2200°F and 2 seconds residence time.

Lightweight aggregate kilns are generally shorter in length than cement kilns and have slightly lower temperatures and residence times. These kilns physically expand shale minerals and do not thermochemically react process materials, as in the case of portland cement kilns. Average temperatures of 2100°F and residence times of 2 seconds or more are common in lightweight aggregate kilns.[3]

A key advantage to burning hazardous wastes in cement kilns is that combustion gas temperatures and residence times generally exceed those experienced in commercial hazardous waste incinerators. For example most hazardous waste incinerators operate at less than 2400°F and 2 seconds residence time, while cement kilns operate at higher temperatures and longer residence times. These high combustion temperatures and long residence times, along with strong turbulence encountered in cement kilns, virtually assure the complete destruction of even the most stable organic compounds.[4, 10] A study of PCB disposal methods has indicated that several cement kilns in Canada, Norway and Sweden have successfully burned PCBs and have achieved greater than 99.9999% DRE with negligible toxic emissions to the environment.[4] USEPA-sponsored tests also demonstrate greater than 99.99% DRE of POHC.[6]

The California Office of Appropriate Technology has also studied the burning of PCBs in cement kilns and in March 1981 concluded "that cement kiln incineration appears to be the best way of eliminating the threat of PCBs since they can destroy such materials to the limits of analytical detectability". Also, the California report noted that "cement kilns have an intrinsic safety factor; and that the conditions for making cement are such that the kiln must maintain operational temperatures, residence time and oxygen parameters that far exceed those required for PCB destruction."[7]

There are some strong economic reasons for burning waste fuels in cement and aggregate kilns. These industrial mineral product processes are very energy intensive, and generally more than half the cost of producing portland cement, for example, is attributable to energy costs. The cement industries are facing strong foreign competition, and the ability to burn cheaper waste fuels would also increase their economic competitiveness and provide certain local economic benefits, especially in terms of employment.[2, 4]

Air Emissions From Waste Burning Cement Kilns

One of the primary environmental concerns about burning hazardous waste fuels is the emissions of toxic air pollutants -that is, products of incomplete combustion such as dioxins and furans. Emission data from four cement kiln test burns have indicated that trace organic emissions of dioxins and furans were below levels of analytical detection.[4, 6, 10] This is due to the very high thermal destructability characteristics of cement kilns in achieving greater than the RCRA-required 99.99% removal efficiency requirement.

There has also been concern about the fate of heavy metals that may be in a cement plant hazardous waste stream and whether or not such toxic materials would be emitted as toxic air emissions or contained in the residual cement kiln waste dust. The amount of heavy metals generally found in waste fuel streams is low compared to metals that are already in the coal and cement process raw materials. It is also important to keep metals at low levels in wastes burned in cement kilns, so as not to adversely affect the cement products. In most cases, maximum metal levels proposed for cement kiln waste fuels are of the same order of magnitude as Number 6 fuel oil, i.e., 100 ppm lead.[3] Other metals are expected to be present at much lower levels. Most metals are entrained in the cement product where they react with lime by pozzolonic cement chemical reactions. About a decade ago, the St. Lawrence Cement Plant in Canada burned waste oils in their cement kiln. More than 90% of heavy metals such as lead were retained in the cement clinker product.[2, 3]

There are concerns that cement kiln dust could be hazardous because of such heavy metals. Most metals in cement kiln dust are in an inert form. A U.S. Bureau of Mines report that summarizes several USEPA extraction procedure tests has shown that most cement kiln dust samples comply as non-hazardous materials.[8] The U.S. Department of Agriculture has also accepted the use of waste cement kiln dust for agricultural use on food crops as a lime substitute.

Portland cement kilns have large quantities of excess process lime in their feed materials, which result in an *in situ* neutralization of the hydrochloric acid generated from burning chlorinated waste in cement kilns. Generally speaking, virtually complete acid gas neutralization occurs in cement kilns, and only trace salts, not HCl, are emitted.[3] Lightweight aggregate process kilns must have, in most cases, highly efficient dry- or wet-process scrubbers to achieve comparable acid gas removal.

Portland cement kilns burning some chlorinated wastes can have a slightly higher potential particulate emission because of a slight increase in alkali halide particulates. Such particulate emissions can be kept in compliance with RCRA particulate emission standards by limiting the total chlorine waste feed and by the use of effective air pollution control systems such as high efficiency electrostatic precipitators or fabric filters (baghouses).

Regulatory Standards for Waste Burning Cement and Aggregate Kilns

There is little doubt that portland cement kilns can meet the high DRE requirements of the USEPA RCRA hazardous waste incineration regulations, which generally require a minimum of 99.99% DRE for POHCs and six 9's or 99.9999% DRE for PCBs.[6, 10] Several tests performed while burning hazardous waste fuels in cement kilns have indicated greater DRE than required by USEPA.[3, 4, 6]

There are no currently available continuous toxics emission monitors for hazardous waste incinerators. The USEPA has set surrogate parameters, such as carbon monoxide levels either established during a trial burn or, more recently, best available technology (BAT) carbon monoxide emission standards, in order to properly monitor and control hazardous waste incinerators. The BAT carbon monoxide emission standard of 100 parts per million (ppm) established by the USEPA for facilities burning waste fuels is objected to by the cement and lightweight aggregate industries because they operate differently than hazardous waste incinerators.

Some regulators have incorrectly implied that failure to meet this 100 ppm carbon monoxide emission standard would indicate poor combustion and perhaps improper or incomplete incineration of hazardous wastes. We believe this is an incorrect assumption for cement plants, based upon our observations that the inability to achieve 100 ppm carbon monoxide in cement kilns has nothing to do with the efficacy of a cement or aggregate kiln to destroy hazardous wastes. We have observed that there may be up to 3 percent or more of hydrocarbons in the stone or shale mineral feed used in cement and aggregate kilns. Because these process kilns are counter-current in design, organics in the waste feed could not be fully burned at the back end of the kiln, resulting in higher carbon monoxide and hydrocarbon emissions (compared to co-current hazardous waste incinerators). This situation has nothing to do with the destruction of hazardous waste components introduced at the firing end of the kiln, especially in the burning zone of the kiln, where process incineration conditions generally exceed the TSCA PCB incineration requirements of 2200°F and 2 seconds residence time.

It is also difficult to always obtain high combustion efficiencies of 99.9% when firing pulverized coal into a cement kiln, compared to burning fuel oil or other liquid organic fuels. The reality is that if a cement kiln can achieve high-temperature burning in excess of the PCB TSCA incineration conditions within the burning zone of the kiln, it should not matter if carbon monoxide emissions are greater than 100 ppm at the back end, or at the wet zone, of the kiln.

Due to the nature of the cement and aggregate mineral processes, we recommend that USEPA consider an exemption to the carbon monoxide and/or hydrocarbon monitoring provisions for mineral kilns and certify cement kiln waste fuel burning operations on the basis of the demonstration of greater than 2200°F burning zone temperatures and residence times in excess of 2 seconds. It may be possible that aggregate kilns can meet a 100 ppm carbon monoxide emission standard; if not, operation standards could be set based upon risk assessment procedures in conjunction with trial burn experience.

If further verification of the high-efficiency POHC destructability characteristics of a cement kiln is required, source owners could perform occasional surrogate tests to verify DRE in operation. The use of new, non-toxic chemical surrogates such as sulfur hexafluoride (SF_6) may be useful here.[11] Tests for SF_6 have been carried out by the Norwegian Institute of Air Pollution Research at the Norcem Cement company in Slemmestad, Norway and have been found to be an appropriate hazardous waste incineration surrogate for POHCs.[4]

We must develop more advanced toxic emission continuous monitoring devices for not only cement kilns but for hazardous and municipal waste incinerators as well. One of the best overall surrogates of toxic emissions like dioxins is total organic halogens. Preliminary work has been done to measure total

organic halogens from hazardous waste fuel burning operations. However, much more has to be done to develop such surrogate toxic emission continuous monitoring devices. We strongly urge USEPA to continue to enhance their research and development efforts in this regard.

Burning Other Municipal and Hazardous Wastes in Cement Kilns

In addition to burning hazardous liquid waste, cement kilns can also play a significant role in helping us solve our municipal and hazardous remedial-action waste disposal problems. For example, cement kilns in England and Germany have been burning municipal waste refuse derived fuels (RDF) quite effectively, and such operations may be expanded here in the future.[9]

There is also a possibility of using new waste disposal technologies to gasify RDF and shredded tires and burn the process gases in cement kilns. In addition, evolving technologies for thermal stripping contaminated soil make it possible to strip hazardous organic constituents from soils and concentrate such hazardous materials on activated carbon. Such contaminated carbon can be burned along with process coal in portland cement kilns, completely destroying the hazardous constituents removed from contaminated soils. Thermal-type strippers can also be set up near cement kilns to process soils contaminated with organic substances, such as fuel oil and gasoline. The stripped vapors can be directly burned in such kilns. Thus, portland cement and aggregate kilns have an even greater possible role to play in also being able to dispose of municipal and other types of solid and hazardous wastes.

Conclusions

In conclusion, there is evidence, both in the United States and in Europe, that burning chemical wastes in cement process kilns can be accomplished within an environmentally sound manner. Existing portland cement kilns, in many cases, have better DRE capability for hazardous organic waste constituents than many existing hazardous waste incinerators.[4, 6] The burning of such hazardous wastes as fuels in existing cement plants can provide economic benefits. The main concern now is how to properly regulate such facilities under the current USEPA RCRA hazardous waste incineration regulations, to insure adequate protection of human health and the environment. These regulations should require a carbon monoxide standard other than 100 ppm and a risk assessment procedure to take into account the nuances of waste burning in portland cement and lightweight aggregate plants.

Mr. Chairman, I hope that these comments are useful to the Committee. The New York State Department of Environmental Conservation would be pleased to assist the Committee in any way possible on this issue.

References

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2. "Hazardous Waste Incineration - The Cement Kiln Option," New York State Legislative Commission on Toxic Substances and Hazardous Wastes, December 1987.

3. Burning Hazardous Wastes in Cement Kilns. Clean Sites Inc., workshop by Gerhard Stohrer Clean Sites Inc., Alexandria, VA, April 30, 1986

4. Lauber, J.D., "Disposal and Destruction of Waste PCBs" in John S. Waid (ed) PCBs and the Environment Volume III, CRC Press Inc., 1987.

5. Lauber, J.D., "Burning Wastes as Fuels in Cement Kilns," Journal of the Air Pollution Control Association, July 1982.

6. Oppelt, E.T., Incineration of Hazardous Waste, a Critical Review. Journal of the Air Pollution Control Association, Vol. 37, No. 5, May 1987.

7. California Air Resources Board, agenda items #81-4-1, February 23, 1981, re: incineration as an acceptable technology for PCB disposal.

8. Characterization of U.S. Cement Kiln Dust, U.S. Dept. of the Interior, Bureau of Mines, information circular IC8885, 1982.

9. The Use of RDF as a Kiln Fuel, U.S. Dept. of Energy report DOE/CS/20/67-04, October 1980.

10. Hazelwood, D.J., et al, A.T. Kearney Inc., "Assessment of Waste Fuel Use in Cement Kilns", prepared for USEPA Office of Research and Development, March 1981.

11. Dellinger, B. and Hall, D.J., "The Viability of Using Surrogate Compounds for Monitoring the Effectiveness of Incineration Systems," Journal of the Air Pollution Control Association, Vol. 36, No. 2, February 1986.

State of Utah
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

Norman H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

Bureau of Solid & Hazardous Waste
288 North 1460 West, P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 538-6121

BSHW-5994-1

March 11, 1988

The Honorable Max Baucus
Chairman
Subcommittee on Hazardous Waste & Toxic Substances
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510-6175

The Honorable Dave Durenberger
Ranking Minority Member
Subcommittee on Hazardous Waste & Toxic Substances
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510-6175

Dear Senators Baucus and Duenberger:

Thank you for the invitation to testify before the Subcommittee on Hazardous Wastes and Toxic Substances on the issue the use of hazardous waste as fuel. While I was not able to attend the hearing on March 4, 1988, I would like to take this opportunity to present information to you concerning Utah's experience with the RCRA regulations as they relate to this issue.

Within the last year, the State of Utah has been approached by eleven different interests proposing hazardous waste incinerators. A majority of these proposals are for operation of commercial facilities. The first actual permit application for a commercial incinerator received by the State was for the conversion of an existing lime kiln to incinerate hazardous waste. While current requirements established under the Federal Resource Conservation and Recovery Act mandate preconstruction permits for such facilities, the same requirements provide exemption for the burning of hazardous waste as fuels. The situation which evolved in Utah was one in which, while the conversion of the kiln to an incinerator was precluded without issuance of a RCRA permit, the kiln did remain operational producing lime, but switched to liquid hazardous waste as fuel. No permit was required under the hazardous waste regulations. There was a county established task force reporting to the county planning commission evaluating the desirability of having a hazardous waste incinerator in the county, a governor's task force reviewing the need for and desirability of one or more hazardous waste incinerators in Utah and a BLM EIS which were all on-going and integral to a major public decision concerning hazardous waste management in Utah. Through the RCRA exemption relating to use of hazardous waste as fuels and because the facility was considered a minor source under the provision of the Federal Clean Air Act and

before any meaningful public input the facility began to use hazardous waste as a fuel. There were no provisions of federal law which applied that would preclude this from happening. In addition, the facility utilized railcars for transporting the waste to the site and burned fuel directly from the railcars and thus, avoided a storage permit under RCRA. The Utah Air Conservation Act contains a requirement for a preconstruction approval order and installation of best available control technology on all air pollution sources, regardless of whether they are major or monor sources. This authority was used to issue a cease and desist order to the facility. The air approval order application was subsequently filed and an approved order is pending. No storage permit has been issued and the potential for hazardous waste being transported and utilized at the site without adequate personal protection and safety plans, financial liability insurance, etc. exists as a result of the exemptions under RCRA.

The use of hazardous waste as fuel in these types of facilities presents an interesting air quality issue. Because many of these sources emit less than 250 tons/year of particulates and/or sulfur dioxide, they become minor sources for purposes of the prevention of significant deterioration criteria established under the Clean Air Act. Therefore, no federal air quality permits are required unless background has been triggered in the particular area where the source is located. There is no federal requirement to evaluate emission of non-criteria pollutants such as acid gases, chlorine, etc. In the State of Utah for example, state air quality requirements were relied upon to address these pollutants which, under federal requirements, would not have been addressed.

Air emissions became a major issue in the Utah, example, because of a salt production facility which was down wind of the lime kiln. Concern for contamination of the salt or the potential for such contamination was raised as a major impact on product marketability by the salt company. This issue is still unresolved.

The use of kilns as hazardous waste incinerators may be a viable alternative, provided they are properly designed and retrofitted, and adequate air pollution control technology is applied. It is essential that such a conversion be required to be permitted prior to construction or modification. The use of hazardous waste as a fuel in kilns should require preconstruction permitting under both hazardous waste and air quality requirements. Such requirements should be established at the federal level. This would provide opportuntiy for regulating agencies and the public to become involved in the process, and would assure that such facilities are treating hazardous waste properly and would, thus, avoid potential adverse effects on public health and environment.

Thank you for the opportunity to comment on this important issue.

If you have any questions about the Utah experience, or if you need additional information, please contact me.

Sincerely,

Brent C. Bradford, Director
Bureau of Solid & Hazardous Waste

BCB/ds

TESTIMONY OF

HYMEN BZURA

OF

OLD BRIDGE CHEMICALS, INC.,

and

MADISON INDUSTRIES, INC.

BEFORE

THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

HAZARDOUS WASTE AND TOXIC SUBSTANCES SUBCOMMITTEE

UNITED STATES SENATE

May 10, 1988

Senator Baucus, Senator Durenberger and
Members of this Committee:

I am a principal of Old Bridge Chemicals, Inc. and Madison Industries, Inc. I recently learned of the testimony of Richard C. Fortuna, Executive Director of the Hazardous Waste Treatment Council, given before this Committee concerning Old Bridge and Madison Industries' alleged "sham recycling" on April 14, 1988. This letter is in response to Mr. Fortuna's testimony. Before attributing any significance to Mr. Fortuna's testimony, this Committee should consider my comments and notify the other businesses referred to by Mr. Fortuna to elicit their comments.

Mr. Fortuna's testimony is, of course, consistent with his interest -- having as many production processes as possible classified and regulated as hazardous waste management. Obviously, the more materials that are considered hazardous waste and the more activities that are considered waste management under federal regulations, the more business for the Hazardous Waste Treatment Council and its members. Business for the Hazardous Waste Treatment Council is not, however, necessarily in the best interest of either industry or the environment.

First, I must note that Mr. Fortuna's testimony with respect to Old Bridge and Madison Industries is almost entirely false. It is also misleading. Mr. Fortuna refers to Old Bridge Chemicals, Inc., CPS and Madison Industries interchangably. These are all separate companies. While Madison Industries and Old Bridge Chemicals have common owners, CPS has no relationship to them. Mr. Fortuna also refers to a facility "known as CPS/Madison Industries". There is no such facility.

Mr. Fortuna makes allegations that "this company" has dumped and discharged chemcials into the public sewer system and upon its own property. It is unclear which company he is referring to. While Old Bridge does discharge certain non-hazardous materials into the public sewer system, this is pursuant to permits issued by the New Jersey Department of Environmental Protection. The other allegations concerning the "dumping" of chemicals onto the property are simply false.

Old Bridge and Madison Industries are engaged in manufacturing businesses. They manufacture various copper and zinc chemicals, respectively. They sell their products to customers such as Asarco, Chemicals Specialities, a Division of LaPort Industries, Exxon, Koppers, Raytheon, Ray-o-Vac, Traylor, Union Carbide and other Fortune 500 companies.

Old Bridge purchases copper chloride and copper ammonium chloride solutions, known as "spent etchant," from circuit board manufacturers such as IBM and Hewlett-Packard. The circuit board manufacturers engage in a process whereby sheets of copper, portions of which are protected in desired configurations, are subjected to either hydrochloric acid or ammonium chloride which dissolves the unprotected copper in an "etching" process, leaving the desired circuit. The etchant solutions are reused by the circuit board manufacturers until such time as the amount of dissolved copper in the solution renders it unsuitable for further etching.

These spent etchants are not wastes, but rather are manufacturing by-products, which are sought out and purchased

by various industries. Significantly, Old Bridge is not paid to handle the spent etchants (as they would be if the solutions were wastes), but rather must pay for these valuable materials. When the spent etchants are not available Old Bridge purchases No. 1 copper scrap (which is the purest copper that can be purchased) to manufacture copper chloride and copper ammonium chloride solutions. Either purchased raw material (such as No. 1 copper scrap) or purchased "spent etchant" solution is utilized as an ingredient in the manufacture of various copper chemical compounds.

For example, the manufactured as well as the purchased copper chloride solution is chemically reacted with sodium hydroxide solution and the resultant solution is filtered. The solid material remaining after filtering is copper oxide, which is dried into "cake" form. The liquid filtrate which remains is a dilute sodium chloride (i.e. common table salt) solution which contains no heavy metal. The filtrate solution is discharged into the public sewer system pursuant to an appropriate New Jersey Department of Environmental Protection permit. The copper oxide cake is either packaged and sold as is to customers or further chemically reacted with sulfuric acid to form copper sulfate solution. The copper sulfate solution is then sold to Old Bridge's customers.

Copper ammonium chloride solution is chemically reacted with sodium hydroxide and steam. As a result of this reaction, ammonium is generated and subsequently utilized by Old Bridge in the manufacture of other chemicals. The resultant solution, copper oxide, is filtered in order to separate the solid copper

oxide from the sodium chloride filtrate solution. The copper oxide is either sold as such or subsequently reacted with sulfuric acid to form copper sulfate solution for subsequent sale.

Old Bridge is clearly engaged in a manufacturing process, not "sham recycling." Allegations of Mr. Fortuna to the contrary are patently absurd. Old Bridge utilizes spent etchants as raw materials to produce useful products. Since Old Bridge is utilizing certain purchased materials as ingredients to manufacture its products it is exempt from the Resource Conservation and Recovery Act. See 40 C.F.R. §261.2 (e). The federal regulations provide that materials which are used or reused as ingredients in an industrial process to make a product, or are used or reused as effective substitutes for commercial products, are not solid waste. 40 C.F.R. §262.1(e). Clearly, the spent etchants are not wastes. It is equally clear that Old Bridge is not engaged in sham recycling but rather engages in a manufacturing process.

The manufacturing activity of Old Bridge and Madison Industries is wise for both industry and the environment. Would this Committee prefer by-products to be completely utilized as raw materials in a manufacturing process (as is done by Old Bridge and Madison Industries) or treated as hazardous waste (as the Hazardous Waste Treatment Council would have it) and add to already burgeoning landfills where they may one day pollute our waters?

Mr. Fortuna would have Congress treat all manufacturing by-products as hazardous wastes. Not only would that be an

unreasonable and unwarranted burden on industry, it would also be unenforceable. For example, 90% of hydrochloric acid produced and sold is a by-product. This amounts to ten billion pounds of by-product hydrochloric acid per year. The by-product hydrochloric acid is sold as a raw material. It should not be, and presently is not, treated as a hazardous waste. The same is true for sulfuric acid and many other chemicals. There are many chemicals such as hydrochloric acid that are sold as virgin that are, in fact, by-products.

It must be noted that one part of Mr. Fortuna's testimony is true. The site on which Old Bridge and Madison Industries operate is a Superfund site. This is due to a leakage which occurred in the late 1960's or early 1970's from defective tanks on the site. The tanks were found defective in a lawsuit and the site is being remediated. Neither Old Bridge nor Madison was ever accused at any time of dumping material on the ground on the site or elsewhere. Instead of Mr. Fortuna wasting this Committee's time making false accusations he should regulate his own members more carefully. Percentage wise there is probably no other industry with more fines and pending suits against it for handling and disposing of hazardous wastes improperly.